Supporting Data FY 1997 Budget Estimate Submitted to Congress - March 1996

DESCRIPTIVE SUMMARIES OF THE



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RESEARCH, DEVELOPMENT, TEST AND EVALUATION Army Appropriation,Budget Activities 6 and 7

OFFICE OF THE SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT and COMPTROLLER) **DEPARTMENT OF THE ARMY**

"READINESS THROUGH MODERNIZATION"

19960514 029

UNCLASSIFIED

VOLUME III

DITO STANTA TANK TOURS DITO



DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY FY 1997 OF THE

VOLUME III
Budget Activities 6 and 7

Office of the Assistant Secretary of the Army (Financial Management and Comptroller) Department of the Army

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FY 1997 RDT&E, ARMY PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

INTRODUCTION AND EXPLANATION OF CONTENTS

- Development, Test and Evaluation program. The Descriptive Summaries are comprised of R-2 (Budget Item Justification Sheet) 1. General. This section has been prepared for the purpose of providing information concerning the Army Research, and R-3 (RDT&E Program Element/Project Cost Breakdown) Exhibits which provide narrative information on all RDT&E program elements and projects for the FY 1995, 1996, 1997 time period.
- 2. Relationship of the FY 1997 Budget Submission to the FY 1996 Budget submitted to Congress. This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.
- A. Program Element Restructures. Explanations for these changes can be found in the narrative sections of the Program Element R-2/R-3 Exhibits.

OLD PE/PROJECT	NEW PROJECT TITLE	NEW PE/PROJECT
0601104A/BH50, BH53, BH55 0602618A/AH80, 0603004A/DL94 0602786A/AH20 0603001A/DXXA, 0603710A/DK70,	Communications Research Electric Gun Technology Countermine Technology Force XXI Soldier	0601102A/AH48 0602618A/AH75 0602712A/AH24 0603001A/DJ50
0603772A/D101, 0604713A/D667 0603019A/DB94 0603734A/DT08, 0602784A/A855 & AT42,	Tractor Dump Rapid Battlefield Visualization	0203735A/DC64 0603734A/AT12
and 0602782A/A779 0603645A/D409 & DB88	Artillery Systems Dem/Val	0603854A/D505

::

A. Program Element Restructures (Continued)

NEW PE/PROJECT	0708045A/DE25 0604854A/D2KT 0604854A/D503 0604760A/DC77 0604760A/DC73 0303150A/DC73 0603856A/D389 0604760A/DC74 0604817A/D901 0605801A/MM58 0605801A/MM58
NEW PROJECT TITLE	Industrial Preparedness Man Tech AFAS Operational Test CRUSADER - ED* Interactive Simulaton Synthetic Theater of War Gobal Command and Control System SCAMP Block II Developmental Simulation Technology All Services Cbt Ident Eval Team (ASCIET) Soldier Systems Command Command Headquarters - MRDC SMART-T Operational Test
OLD PE/PROJECT	0603771A/DE20 0604645A/D2KT 0604645A/D417 & D418 0604715A/DC91 0604759A/DC55 0203740A/DC49 0303142A/D386 0604817A/D482 0605801A/MM43 0605898A/MM03

Applicable portions of PE 0605896A, Base Operations - RDT&E, "J" Operation of Utilities and "M" Other Engineering, were restructured to a new PE 0605879A, Real Property Services (RPS).

* CRUSADER was previously known as Advanced Field Artillery System(AFAS) and Future Armored Resupply Vehicle





B. FY 1997 Developmental Transitions.

FROM		TO
PE/PROJECT	PROJECT TITLE	PE/PROJEC

0603313A/D550 0604710A/DL74 Long Range Advanced Scout Surv Sys (LRAS3) Counter Active Protection 0602303A/A213 0603774A/D131

initiatives for FY 1997 are shown below with asterisks. The remaining programs listed are outyear initiatives beyond FY 1997 or C. Establishment of New FY 1997 Program Elements/Projects. There are no major system new starts. Minor new were previously funded from other Defense appropriations. The Tractor programs are initiatives moved from other programs.

PE/PROJECT	0602786A/AC60 0602786A/AC61 0603313A/D549 0603710A/DC63 0305123A/DH12 0604641A/DE47 0604802A/D712 0604823A/DL85 0605854A/D509 0605805A/D509 0605805A/D296 0102419A/DE55 0208053A/M635 0208735A/D2TT
TITLE	Tractor Zinc Tractor Quake Tractor Quake Tractor Union 2.75" Anti-Air Techology Demonstration* Tractor Quake Intelligent Support to Force XXI* Tactical Unmanned Ground Vehicle (TUG-V) Integrated Broadcast System* Non-Lethal Programs* Firefinder Preplanned Product Improvement (P3I)* ATCAS Pyrotechnic Reliability and Safety* Joint Aerostat Program Office Joint Tactical Ground Station (JTAGS)* Bradley A3 IOTE* Abrams IOTE*

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D. FY 1997 programs for which funding was shown in the FY 1996 President's Budget Submit (February 1995), but which are no longer funded.

BRIEF EXPLANATION	Program terminated. Funds transferred to Soldier Survivabiltiy. Lower priority effort became unfunded. Program terminated. Project completed in FY 1996. Funds transferred to higher priority programs.
TITLE	AGS Improvements Tactical Logistics Producibility Technology Armored Gun System (AGS) GIDEP/AGED Field Artillery Ammunition (NATO)
PE/PROJECT	0203735A/D392 0603001A/DC44 0603005A/A340 0604645A/D413 0605803A/M731

Descriptive summaries for PE 0603806A - NBC Defense Systems, AD and PE 0604806A - NBC Defense Systems, ED are not provided in this Army submission. Since these programs were transferred to Defense RDT&E in FY 1996, program details are available in the Defense RDT&E submission under PE 0603884BP and PE 0604384BP.

3. Classification. This document contains no classified data. Classified/Special Access Programs which are submitted offline are listed below.

02037354/DC64	0603005A/DC82	0603238A/D182/D189
02031 33/ 0E 33-	0603009A	0603322A
0203/44/2020 0203808A	0603012A	0603639A
0203808A	0603013A	0603647A
020333A	0603017A	0603710A/DC63
0602104A	0603018A	0603851A
0602122A	0603019A	0604649A/DG15
0602788A	0603020A	
0603122A		



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7	0602270A	Electronic Warfare (EW) Technology	129
∞	0602303A	Missile Technology	136
6	0602308A	Modeling and Simulation Technology	140
10	0602601A	Combat Vehicle and Automotive Technology	146
Ξ	0602618A	Ballistics Technology	160
12	0602622A	Chemical, Smoke and Equipment Defeating Technology	168
13	0602623A	Joint Service Small Arms Program	173
14	0602624A	Weapons and Munitions Technology	175
15	0602705A	Electronics and Electronic Devices	186
16	0602709A	Night Vision Technology	192
17	0602712A	Countermine Systems Exploratory Development	195
18	0602716A	Human Factors Engineering Technology	198
19	0602720A	Environmental Quality Technology	204

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26	0602789A	Army Artificial Intelligence Technology	288
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28	0603002A	Medical Advanced Technology	310
29	0603003A	Aviation Advanced Technology	332
30	0603004A		348
31	0603005A	Combat Vehicle and Automotive Advanced Technology	357
32	0603006A	Command, Control and Communication Advanced Technology	309
33	0603007A	Manpower, Personnel and Training Advanced Technology	381
34	0603105A	Military Human Immunodeficiency Virus (HIV) Research	386
35	0603238A	Air Defense/Precision Strike Technology	388
36	0603270A	Electronic Warfare (EW) Technology	394
37	0603313A	Missile and Rocket Advanced Technology	399
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48	0603627A	Smoke, Obscurant and Target Defeating System - Advanced Development	465
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50	0603645A	Armored Systems Modernization - Advanced Development	474
51	0603649A	Engineering Modification Equipment - Advanced Development	492
52	0603653A	Advanced Tank Armament System	497
53	0603713A	Army Data Distribution System	502
54	0603730A	Tactical Surveillance System - Advanced Development (TIARA)	511
55	0603745A	Tactical Electronic Support Systems - Advanced Development (TIARA)	515
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88	0604715A	Non-System Training Devices - Engineering Development	908
68	0604716A	Terrain Information - Engineering Development (TIARA)	824
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91	0604740A	Tactical Surveillance System - Engineering Development	832
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93	0604746A	Automatic Test Equipment Development	852
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COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D976 Army Threat Simulator Program	19437	14005	11627	14040	13976	16345	16625		Continuing	Continuing Continuing

Initially created to develop simulators of Soviet equipment, the changing world order has expanded the scope of this program to address rest of world (ROW) threats. Actual threat equipment is being acquired when appropriate in lieu of development. Total package fielding will still be required (i.e., instrumentation, operations and maintenance, training and weapon system testing. Each capability is pursued in concert with the others so as to avoid duplication while providing the proper mix of test resources needed to support both Army and Tri-Service testing requirements. The Army Threat Simulator Program (ATSP) is a continuing program which finances development of realistic mobile threat simulators for Army test organizations. These battlefield simulators represent systems (e.g. missile systems; command, control and communications systems; manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets, and Threat Simulators (PM ITTS), and CROSSBOW, which is administered by the Director for Test, Systems Engineering and Evaluation, Office of the Secretary of Defense (OSD) These affiliations eliminate any duplication within the U.S. Army or Department of Defense (DoD). Includes research and development effort directed toward support of A. Mission Description and Budget Item Justification: This program finances the design, fabrication, integration and fielding of realistic mobile threat simulators in support of Army training and developmental/operational testing. It provides the capabilities required to create realistic simulated tactical environments essential to user electronic warfare systems; helicopters; etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office concerns that the Army conduct operational testing in a realistic threat environment. installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

FY 1995 Accomplishments:

- 4197 Air Defense Systems Continued development of XM15A/S system
- Air Defense Systems Completed hardware development of second limited XM43A/S anti-aircraft artillery (AAA) gun system 663
- Advanced/Electronic Combat System Initiated/completed a software simulation development of a low energy laser XMDEWS 946
 - Advanced/Electronic Combat System Initiated development of XM330ES ground based jammer 699
 - 805 Aviation Systems Completed development of XMHKS helicopter jammer
- Battle Management Network Completed development, validation, and fielding of XMTAS Command, Control, and Communications (C3) System
 - Battle Management Network Initiated development of regimental elements of XMC3S
- 4109 Mission Support Personnel costs and overhead
- 1523 Mission Support Operations and planning
- Mission Support Program Technical Support (Engineering, accreditation, configuration management, and logistic support)
- otal 19437

Project D976

Exhibit R-2 (PE 0604256A)

Page 1 of 3 Pages

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256A Threat Simulator Development	PROJECT
FY 1996 Planned Program: 2620 Air Del 1000 Advanc 1364 Advanc 200 Aviatio 2480 Battle? 2480 Battle? 2480 Battle? 2480 Battle? 2480 Sattle? 2480 Sattle? 2480 Sattle? 2480 Sattle? 2480 Battle? 2480 Battle? 2480 Battle? 2480 Battle? 2480 Battle? 3216 Mission 2120 Mission 259 Small?	Air Defense Systems - Continue development of XM15A/S system Advanced/Electronic Combat Systems - Conduct proof-of-principal testing of eye safe lasers to simulate threat laser weapon XMDEWS Advanced/Electronic Combat Systems - Continue development of XM330ES Aviation Systems - Initiate/complete concept plan for Global Positioning System (GPS) Advanced Airborne jammer Battle Management Network - Continue development of regimental elements of XMC3S Mission Support - Personnel Costs and Overhead Mission Support - Operations and Planning Mission Support - Program technical support (engineering, accreditation, configuration management, and logistic support) Small Business Innovative Research/Science and Technology Transfer (SBIR/STTR) Revised Economic Assumption not available for execution.	eapon XMDEWS
FY 1997 Planned Program:	Air Defense Systems - Continue development of XM15A/S system Advanced/Electronic Combat Systems - Complete development of the XM330ES Advanced/Electronic Combat Systems - Initiate hardware simulator development of a low energy laser XMDEWS Battle Management Network - Complete development of regimental elements of XMC3S Mission Support - Personnel costs and Overhead Mission Support - Operations and Planning Mission Support - Program Technical support (engineering, accreditation, configuration management, and logistic support)	port)

THREAT SIMULATOR Test Programs Supported: Aircraft Survivability Equipment (ASE) (ALQ-36) (APR-39) Special Electronics Missions Aircraft (SEMA) ASE Force Module (GSM) IOTE; SEMA ASE (ALQ-136 Radar Jammer); AN/APRA (XE-2) Advanced Threat Radar Warning Receiver, SEMA; 155MM and Multiple Launch Rocket (FAAD) C31; Army Tactical Missile System (ATACMS); AN/ALQ-136; Joint Surveillance Target Attack Radar Systems (JSTARS); XM1106 Smoke Generating System; System (MLRS) - Sense And Destroy Armor (SADARM); Special Operations (Special mission aircraft for performance and survivability test); Forward Area Air Defense Command, Control and Intelligence (FAAD C21) (Light) FDTE; MLRS SADARM IOTE; Guardrail Common Sensor; OH-58D Kiowa Scout Attack Helicopter: Patriot Development Test and Evaluation (FDTE); Unmanned Aerial Vehicle (UAV) Short Range Initial Operational Test and Evaluation (IOTE); Block 11A Ground Station Product Improvement Program (PIP); Non-Line-of-Site (NLOS); MH-60K; Firefinder; RAH-66; UAV - Close Range; Longbow Apache; Forward Area Air Defense

Project D976

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Page 2 of 3 Pages

Exhibit R-2 (PE 0604256A)





RDT&E BUDGET ITEM JUSTIFICATI	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibit)	DATE March 1996	60
вироет АстіVITY 6 - Management Support	PE NUMBER AND TITLE 0604256A Thre	b ਸπ∟E Threat Simulator Development		Р ROJECT D976
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	EY 1996 14397 14146 -141	FY 1997 12870 -1243	,	
Program Change Explanation: Funding: FY 97 reflects funds moved to higher priority program (-1000) and Revised Economic Assumption (-243)	priority program (-1	000) and Revised Economic Assump	otion (-243)	
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RDT&E BUDGET ITEM JUST		5	S		FICATION SHEET (R-2 Exhibit)	oit)		DAIE	March 1996	60
BUDGET ACTIVITY	entranta de la companya de la compan		PENU	PE NUMBER AND TITLE	ITLE					
6 - Management Support			090	0604258A T	Target Systems Development	stems De	velopme	ant		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	13679	13900	10129	11692	15346	15078	16466		Continuing	Continuing
D238 Aerial Targets	8353	8478	9029	6626	6533	6637	7287		Continuing	Continuing
D459 Ground Targets	5326	5422	3423	5066	8813	8441	9179		Continuing	Continuing

and ground targets for test and evaluation. The Army executes development of some service peculiar target requirements in support of quality assurance, lot acceptance and economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing both rotary wing Mission Description and Budget Item Justification: This program funds aerial and ground hardware and software target development, maintenance and upgrade. The overall objective is to allow validation of weapon system accuracy and reliability by developing the aerial and ground targets essential for test and evaluation. They are training, and continues development of service peculiar and previously begun target materiel to maintain continuity. Includes research and development effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

Page 1 of 5 Pages

Exhibit R-2 (PE 0604258A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	FION S	HEET (R	-2 Exhil	oit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 0 0 0	PE NUMBER AND TITLE 0604258A Targ	PE NUMBER AND TITLE 0604258A Target Systems Development	stems Do	evelopme	ent		PROJECT D238
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D238 Aerial Targets	8353	8478	6706	6626	6533	6637	7287		Continuing	Continuing Continuing

A. Mission Description and Justification: Project D238 - Aerial Targets: Provides for development, acquisition, operation, storage, update, and maintenance of realistic and development/enhancement/update engineering services of the developed and acquired threat targets to ensure availability for the test and evaluation customer. The U.S. evaluation and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed wing process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, targets, full-scale, miniature and subscale targets, tactical ballistic targets, ancillary devices and remote control systems. To stress systems under test, aerial targets must have flight characteristics, signatures and other performance factors which emulate the modern threat. This tasking includes long-range planning to determine future target surrogate or acquired threat high performance, multi-spectral aerial targets that can fully stress the latest air defense and air-to-air weapons. Modern weapons require test, needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation Army is the Reliance lead for rotary wing targets and the Tri-Service lead for procurement and enhancement of the MQM-107 Fixed Wing Target.

FY 1995 Accomplishments:

•	3300	3300 Continued development of HOKUM-X Rotary Wing Target.
•	3200	Continued development and testing of Universal Drone Control System (UDCS) for UH-1 and AH-1 airframes
•	403	403 Continued development, enhancement, maintenance, and storage for all Research Development Test & Evaluation (RDT&E) aerial targets, towed
		targets and ancillary devices.
•	300	Continued participation in Air Force led joint development of Full Scale Fixed Wing Target (QF-4); participated in the Tri-service vector scoring
		development program; and continued to participate in and provide funding for Reliance.
•	350	Continued development of Target, Tracking, and Control System (TTCS) mapping via video monitors to replace current plotting boards.
•	800	Continued enhancements to the MQM-107.
Total	8353	

FY 1996 Planned Program:

3564 Continue development of HOKUM-X Rotary Wing Target.

• 517	517 Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices.
• 709	_
	development program; and continue to participate in and provide funding for Reliance.
008	0 Continue enhancement of the Target Tracking and Control System (TTCS).
• 1100	1100 Complete UDCS Program.
Project D238	Page 2 of 5 Pages Exhibit R-2 (PE 0604258A)

The state of the s	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		R-2 Exhibit) DATE March 1996
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0604258A Targ	PROJECT Target Systems Development D238
FY 1996 Planned P 1059 483 186 Total 8478	FY 1996 Planned Program: (continued) 1059 Continue enhancement of the MQM-107 Target System. 483 Perform conceptual studies for future rotary wing and fixed wing targets. 186 Small Business Innovative research/Science and Technology Transfer (SBIR/STTR) 60 Revised Economic Assumption not available for execution.	m. fixed wing targets. 10logy Transfer (SBIR) 1tion.	STTR)
FY 1997 Planned Programs	rogram: Continue development of HOKUM-X Rotary Wing Target. Continue enhancement of the MQM-107 Target System. Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. Continue enhancement of the Target Tracking and Control System (TTCS)	arget. m. ıd storage for all RDT8 ntrol System (TTCS)	&E aerial targets, towed targets and ancillary devices.
AERIAL TARGETS (NLOS), Comanche target	AERIAL TARGETS Test Programs Supported: Forward Area Air Defense (NLOS), Comanche, and under Reliance, helicopter targets for the Air Force target	(FAAD) Missile (Stinger and Navy and technol	AERIAL TARGETS Test Programs Supported: Forward Area Air Defense (FAAD) Missile (Stinger), Patriot, Corps Surface to Air Missile (SAM), Non-Line-Of-Sight (NLOS), Comanche, and under Reliance, helicopter targets for the Air Force and Navy and technology programs which demand accurate threat representation in their aerial target
B. Project Change Summary Previous President's Budget (FY Appropriated Amount (FY 1995)	FY 19 Y 1996) 84 5) 83	95 FY 1996 89 8717 54	FY 1997 6881
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY	1997) since	-1 8564 -86	-175
FY 1996 President's Budget Current President's Budget Submit		8353 8478	90.29
Program Change Ех	Program Change Explanation: Funding: FY97 reflects funds adjusted for Revised Economic Assumption (-175)	levised Economic Assu	ımption (-175)
Project D238		Page 3 of 5 Pages	Exhibit R-2 (PE 0604258A)
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RDT&E BUDGET ITEM JUST	EM JUS		TION S	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0604258A Targe	e NUMBER AND TITLE 0604258A Target Systems Development	stems De	evelopme	ent	.	РRОЈЕСТ D459
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D459 Ground Targets	5326	5422	3423	5066	8813	8441	9179		Continuing	Continuing Continuing
							,	,	,	

ground target research, development, test and evaluation process; execution of the validation process; acquisition of foreign assets; and continuing maintenance, storage, and development/enhancement/update engineering services of the developed and acquired targets to ensure availability for test and evaluation customers. Project also manages systems by developing surrogate and acquiring actual foreign vehicle targets, and developing virtual target computer models of ground vehicle targets. These computer models are compatible with Distributed Interactive Simulation (DIS). These products are required to adequately stress weapons systems undergoing test and evaluation. This tasking includes long range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the A. Mission Description and Justification: Project D459 - Ground Targets: This program funds Army efforts to support test and evaluation of advanced weapon use of current assets and operates centralized spare parts program. The US Army is the Tri-service lead for providing ground targets for test and evaluation.

FY 1995 Accomplishments:

Managed and oversaw Primary Operating Centers operation, storage, maintenance, configuration management and repair of Ground Targets Assets. Developed ground target subsystem signature enhancements, such as, Infrared (IR), Millimeter Wave (MMW), Radio Frequency (RF), etc. Continued to develop safety plans to meet Department of Defense (DoD) acquisition requirements and federal safety standards. Performed feasibility studies on utilization of Distributed Interactive Simulation (DIS) virtual computer models. Acquired new foreign materiel assets, remote controls, and managed all ground target foreign asset surrogates. Continued validation, accreditation, and certification of ground targets. initiated concept exploration of a new ground target surrogate. Continued development of BMP3-S armored infantry vehicle. Acquired spare parts to support the Ground Targets fleet. 150 382

FY 1996 Planned Program:

		17-11-11-11-11-11-11-11-11-11-11-11-11-1
•	1981	Manage and oversee Primary Operating Centers operation, storage, maintenance, configuration management and repair of Ground Target Assets
		including acquisition of new material and spare parts.
•	243	243 Continue validation, accreditation, certification, and configuration controls/studies of ground targets and develop safety and environmental plans.
•	1074	1074 Continue development and prototype of BMP3-S surrogate armored infantry vehicle.
•	1027	Initiate development of virtual ground targets to support test and evaluation. These computer models are compatible with the Distributed Interactive
		Simulation (DIS).
•	941	941 Initiate development of a new ground target surrogate (T80U-S).

Page 4 of 5 Pages

Project D459

Exhibit R-2 (PE 0604258A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	2012		R-2 Exhibit) DATE March 1996	1996
BUDGET ACTIVITY			PE NUMBER AND TITLE) TITLE	PROJECT
6 - Management Support	nt Support		0604258A	0604258A Target Systems Development	0459
FY 1996 Planned	FY 1996 Planned Program: (continued)		er i van jazoc nomini van errenden kantana kantana kantana kantana kantana kantana kantana kantana kantana kan	erieristos en legalitas en	
8	Small Business Innovative Research/Science an	nd Technology	d Technology Transfer (SBIR/STTR)	/STTR)	
38	Revised Economic Assumption not available for execution.	or execution.	•		
Total 5422	•				
FY 1997 Planned Program:	rogram:				
• 1631	Manage and oversee Primary Operating Cente	rs operation, st	orage, maintenar	1631 Manage and oversee Primary Operating Centers operation, storage, maintenance, configuration management and repair of Ground Targets assets	gets assets
	including acquisition of new material and spare	e parts.	ı		
06	Continue validation, accreditation, and certific	ation and confi	guration control	Continue validation, accreditation, and certification and configuration controls/studies of ground targets and develop safety and environmental plans.	nmental plans.
454	Continue development of virtual ground targets		st and evaluation	to support test and evaluation. These computer models are compatible with the Distributed Interactive	uted Interactive
	Simulation (DIS).				
• 924	Continue development and prototype of a new	ground target	ground target surrogate (T80U-S).	S).	
324	Complete the prototype of BMP3-S armored in	nfantry vehicle.			
Total 3423					
GROUND TARGET	S Test Programs Supported: Ground Targets e	forts are invest	ments which en	GROUND TARGETS Test Programs Supported: Ground Targets efforts are investments which enable DoD customers to conduct appropriate developmental and	ıl and
operational testing,	evaluation and training in the future. Weapon sy	stems for whicl	n these developn	operational testing, evaluation and training in the future. Weapon systems for which these developments are required include: Longbow, Close Combat Anti-Armor	-Armor
Weapon System (Ct Aerial Vehicle (UA ¹	Weapon System (CCAWS), Wide Area Mine (WAM), Non-Line of ? Aerial Vehicle (UAV-SR), Short Range Assault Weapon.	Sight (NLOS),	Line-of-Sight Aı	Weapon System (CCAWS), Wide Area Mine (WAM), Non-Line of Sight (NLOS), Line-of-Sight Antitank (LOSAT), Ballistic Anti-Armor Submunition (BAT), Unmanned Aerial Vehicle (UAV-SR), Short Range Assault Weapon.	T), Unmanned
B. Project Change Summary	Summary	FY 1995	FY 1996	FY 1997	
Dravious President	Previous President's Rudget (FV 1996)	5440	5575	4512	

FY 1997	4512					-1089		3423
FY 1996	5575			5477	-55			5422
FY 1995	5440	5326	0					5326
B. Project Change Summary	Previous President's Budget (FY 1996)	Appropriated Amount (FY 1995)	Adjustments to FY 1995	Appropriated Amount (FY 1996)	Adjustments to FY 1996	Adjustments to Budget year (FY 1997) since	FY 1996 President's Budget	Current President's Budget Submit

Program Change Explanation: Funding: FY 97 reflects funds moved to higher priority program (-1000) and Revised Economic Assumption (-89)



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Project D459

Exhibit R-2 (PE 0604258A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE M	March 1996	
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0604759A Majo	ппе Najor Tes	t and Ev	aluation	PENUMBER AND TITLE OCO 100 TO THE STAIN TO THE STREET OCO 100 TO THE STREET OCO 100 THE S	nt	
COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	48797	62049	41725	40586	33434	35449	37845		Continuing	Continuing
DC55 Distributed Dev Simulation Tech*	2758	2698	0	0	0	0	0		Continuing	Continuing
D983 Major Test & Evaluation - USAKA	2037	2421	2423	2412	2401	2514	2618		Continuing	Continuing
D984 Major Technical Test Instrumentation	24041	36897	32197	34685	28495	28173	29388		Continuing	Continuing
D986 Major User Test Instrumentation	19961	23033	7105	3489	2538	4762	5839		Continuing	Continuing
*Project DC55, Distributed Development Simulation Technology, transfers in FY 1997 to PE 0604760A	n Technology	, transfers in	n FY 1997 tc	PE 060476	0A.					

field instrumentation for U. S. Army Operational Test and Evaluation Command (OPTEC) test organizations. "Major instrumentation is defined as exceeding \$2 million per activities including Major Ranges and Test Facility Bases (MRTFB): White Sands Missile Range (WSMR), NM; Yuma Proving Ground, (YPG), AZ; Aberdeen Test Center programs required for these systems. Army testing facilities are also surveyed to determine current testing capability shortfalls. This PE is appropriate to Budget Activity 6 (ATC), MD; Dugway Proving Ground (DPG), UT; and US Army Kwajalein Atoll (USAKA), Marshall Islands. Program also funds development and acquisition of major Mission Description and Budget Item Justification: This program funds development and acquisition of major developmental test instrumentation for the TECOM test year or \$10 million acquisition cost in Research, Development, Test and Evaluation (RDT&E) funding". Requirements for instrumentation are identified through a long range survey of project managers; Research, Development and Engineering Centers (RDECs); and Battle Laboratories developing future weapon systems and the test because it includes research and development effort directed toward support of installations or operations required for general research and development use.

Page 1 of 10 Pages

Exhibit R-2 (PE 0604759A)

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BUDGET ACTIVITY 6 - Management Support			PEN 060	PE NUMBER AND TITLE 0604759A Majo	PENUMBER AND TITLE O604759A Major Test and Evaluation Investment	t and Ev	aluation	Investme		PROJECT DC55
COST (In Thousands) FY 1995 F	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC55 Distributed Dev Simulation Tech*	2758	2698	0	0	0	0	0		Continuing	Continuing Continuing

virtual combined arms battlefield with the warfighter-in-the-loop to evaluate weapon system concepts, tactics, doctrine and test plans. The project also develops and applies A. Mission Description and Budget Item Justification Project DC55 - Distributed Development Simulation Technology: This project supports the Core Distributed Interactive Simulations (DIS) Facilities (CDF) at Fort Knox, KY, Fort Rucker, AL, Fort Benning, GA and the Operational Support Facility in Orlando, FL, which provide Distributed Simulation technology, and provides systems engineering management support to FORCE XXI and the Synthetic Theater of War (STOW). Funding Line Transfers in FY 1997 to 0604760A under project DC74 Developmental Simulation Technology.

FY 1995 Accomplishments:

2758 Continued sustainment of Advanced Distributed Simulation Technology support which enables combat, materiel, and training developers and testers

to perform experiments to test tactics, doctrine and weapon design

FY 1996 Planned Program:

2758

Total

Continue sustainment of Advanced Distributed Simulation Technology support which enables combat, materiel, and training developers and testers to perform experiments to test tactics, doctrine and weapon design

Small Business Innovative Research/Science and Technology Transfer (SBIR/STTR) 9

Revised Economic Assumption not available for execution.

2698 Total FY 1997 Planned Program: Realign to 0604760A project DC74 Developmental Simulation Technology.

Project DC55

Page 2 of 10 Pages

Exhibit R-2 (PE 0604759A)





вирбет АстіVіTY 6 - Management Support				96
	PE NUMBER AND TITLE 0604759A Majo	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment		PROJECT DC55
FY (196) 997) since	FY 1996 2773 2725 -27	FY 1997 2726 -2726		
Current President's Budget Submit Change Summary Explanation: Realignment of FY97 funding to Program Element 0604760A, project DC74	2070 ent 0604760A, pro			
	Page 3 of 10 Pages		Exhibit R-2 (PE 0604759A)	

RDT&E BUDGET TEM JUST		FICA	SOL		IFICATION SHEET (R-2 Exhibit)	(Jiq		DATE	More 400g	3
DIDOCT ACTIVITY	A CONTRACTOR OF THE STATE OF TH	PART PART CARROLLES PARTE PART	STATE OF THE PERSON OF THE PER	ter property and the second se	NA STANDARD OF THE STANDARD OF THE STANDARD OF THE					•
			FE	PE NUMBER AND TITLE	TITLE				Δ.	PRO JECT
6 - Management Support			9	14759A B	0604759A Major Test and Evaluation Investment	tand Ev	aluation	Investme		D983
	Control of the second s	Contract parts (September 2000) and Contract September 2000)	er independent and Marion descriptions	e e e e e e e e e e e e e e e e e e e		The Continue of the Continue o	AND THE PROPERTY OF THE PROPER	The state of the s	Continues in property of the property of	Committee of the control of the cont
COST (In Thousands)	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		Complete	aleri mase,
D983 Major Test & Evaluation - USAKA	2037	2421	2423	2412	2401	2514	2618		Continuing	Continuing Continuing

command/control and other equipment are required to maintain USAKA as a national test range. Approximately \$5 million of range improvements are required annually to A. Mission Description and Budget Item Justification: Project D983 - Major Test and Evaluation (T&E) Investment - USAKA: This project funds the purchase of major Improvement and Modernization (I&M) equipment at the US Army Kwajalein Atoll (USAKA) in the Marshall Islands. USAKA is a national test range supporting Army, Ballistic Missile Defense Organization (BMDO), US Air Force, National Aeronautics and Space Administration (NASA), and other customers. Major Test and Evaluation (T&E) items are defined as costing \$2 million in a single year or items costing \$10 million for total acquisition. Upgrades to radar, telemetry, optics, maintain USAKA test range capability in support of current projected workload.

FY 1995 Accomplishments:

FY 1996 Planned Program:

9	2350	2350 Global Positioning Translator Processor System (GPTPS). The GPTPS development is required to allow Kwajalein Missile Range (KMR) to maintain
44.a.		and improve its ability to acquire accurate timing and spacial positioning data on test objects and thus enhance the dynamic metric and miss-distance
		measurement capabilities
•	54	54 Small Business Innovative Research/Science and Technology Transfer (SBIR/STTR)
•	17	Revised Economic Assumption not available for execution.
Total	2421	
i n		

FY 1997 Planned Program:

8	1934	5
•	489	appeare is required to improve performance, increase system remoning and reduce maintenance costs Complete Global Positioning System Translator Processory System GTP installation and integration.
Total	2423	

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Exhibit R-2 (PE 0604759A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE March 1996	9661
вирсет Астіміту 6 - Management Support	PE NUMBER AND TITLE 0604759A Majo	PE NUMBER AND TITLE OG04759A Major Test and Evaluation Investment	Investment	PROJECT D983
B. Project Change Summary Previous President's Budget Appropriated Amount (FY 1995) 2037	FY 1996 2488	<u>FY 1997</u> 2489	,	
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustment to Budget Year (FY 1997) since	2445	99-		
Current President's Budget Submit Current President's Budget Submit Current President's Budget Submit	2421 1 Boongmis Assum	2423 mntion (-66)		
Project D983	Page 5 of 10 Pages	Exh	Exhibit R-2 (PE 0604759A)	9A)

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RDT&E BUDGET ITEM JUST			S S S S S S S S S S	FICATION SHEET (R-2 Exhibit)	Z Exhi			DATE	Warch 1996	G
BUDGET ACTIVITY		organ protections, data transcribingsorte participation	PE N	PE NUMBER AND TITLE	IITLE				Р	PROJECT
6 - Management Support			090	1604759A Major Test and Evaluation Investment	lajor Tes	tand Ev	aluation	Investme		0984
COST (In Thousands) FY 1995 F	FY 1995 Actual	FY 1996 · Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D984 Major Technical Test Instrumentation	24041	36897	32197	34685	28495	28173	29388		Continuing	Continuing Continuing

efforts. Hardened Subminiature Telemetry Sensor System which is a new technology development for testing smart munitions and weapons; Frequency Surveillance System instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command (TECOM) activities. Major instrumentation is defined frequency spectrums used by our modernized weapon systems; and Dynamic Infrared Scene Projector (DIRSP) which will be used in testing new Infrared munitions and funding. Funding increases in FY 1996 are due to realignment of major instrumentation funding from PE 0605602A, D453, and three new instrumentation development requires intensive management during acquisition. This project funds major instrumentation that exceeds \$2 million per year or \$10 million acquisition cost in RDT&E by having one or more of the following attributes: joint service requirements, multiple command use, high visibility, large dollar value, produces a new capability or (FSS) which will augment manpower reduction, replace, upgrade, and remote control daily radio frequency surveillance operations, and allow the monitoring of new A. Mission Description and Budget Item Justification: Project D984 - Major Technical Test Instrumentation: This project develops and acquires major test missiles by hardware in the loop simulation and virtual testing.

FY 1995 Accomplishments:

		TOTAL
8	426	426 Initiate the instrumentation of the Trench Warfare II (TW) link, high speed networking, and ethernet hub for Fiber Optic Network (FON) at Aberdeen
1. 1 × 4.1		Test Center, MD.
•	6500	Continued acquisition of laser illuminator, instrumentation installation at the Perryman Test Area (PTA) and the Munson Test Area (MTA); initiated
is zeekkee		development of fiber optics at C-field, completed Barricade B1 range instrumentation and continued development of vehicle on-board data
MIN PO		acquisition and sensors for Land Combat Instrumentation (LCI)
•	6924	Conducted Source Selection Evaluation and awarded prime contract for the WSMR Test Support Network (TSN). Initiated work on the Eastern Fiber
Secretary vi		Optic Backbone. WSMR-TSN is a total range data transmission system which greatly improves test products while decreasing dramatically
tions:		operational cost
8	7448	Continued WSMR execution of the Army's portion of the Global Positioning System (GPS) full rate production contract, acquiring and tielding
		hardware and software at all Army test organizations
3	2743	Provided in-house support (engineering analysis, concept formulation, salaries, travel, etc.) to on going projects and continued analysis of future
•		instrumentation requirements
Totai	24041	

Project D984

Page 6 of 10 Pages

Exhibit R-2 (PE 0604759A)

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	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	March 1996
BUDGET ACTIVITY 6 - Management Support	ent Support	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	PROJECT D984
FY 1996 Planned Program:	e the instrumentation of the TW II	Link, high speed networking, and ethernet hub. Initiate securing the FON for classified data transmission.	ta transmission.
3950	Complete instrumentation of MTA, acquis	Complete instrumentation of MTA, acquisition of laser illuminator, development of fiber optics at C-field, Barricades B2 and B3 range	3e
		instrumentation and continue development of vehicle on-board data acquisition, continue installation of PTA instrumentation and sensors for LCL.	nsors for LCI. MR-TSN is a 3
• 13475	Complete Phase 1 of the Eastern Fiber Option of the Complete With I	Complete Phase 1 of the Eastern Fiber Optic Backbone (3 segments) and complete instantation of receipting from the Eastern Fiber Company of Section 1 of FY 2003. The complete Phase 1 of the Eastern Fiber Operating Capability (IOC) in FY 1997 and Full Operating Capability (FOC) in FY 2003.	2003.
200	Initiate Frequency Surveillance System (F	SS) modernization project, automating five sites capable of monitoring frequencies from 2 Mhz to 100 Ghz	Mhz to 100 Ghz
• 7337	-	Continue WSMR execution of the Army's portion of the GPS full rate production contract, acquiring and fielding hardware and software at all Army	vare at all Army
210		D453) development of software integration for system level Army Tactical Command and Control System	Control System
	_	(ATCCS), Enhanced Position Location & Reporting System (EPLRS), & Single Channel Air to Ground Radio (SINCGARS) technical test projects at	al test projects at
0061		WSMR/Electronic Proving Grounds (EPG). Initiate Hardened Subminiature Telemetry and Sensor System (HSTSS) project to develop transmitters, antennas, sensors, polymer batteries and	atteries and
	_	electronic packaging techniques in support of flight tests of indirect/direct fire and smart munitions at Yuma Proving Grounds (YPG) and other Army proving Grounds (YPG) and other Army HSTS is a five year Army project with FOC in FY 2001. Office of the Secretary of Defense (OSD) funded FY 93-95 as a Test) and other Army a Test
	Technology Development Program under the Centralized T&E Investment Program (CTEIP).	&E Investment Program (CTEIP).	
• 2000		Initiate a Dynamic Infrared Scene Projector (DIRSP) project to conduct performance testing of night vision sensors and Infrared (IR) imaging seekers, and provide the capability to fully simulate and synthesize present and future battlefields with a mix of real and simulated objects, at Redstone and provide the capability to fully simulate and synthesize present and future battlefields with a mix of real and simulated objects, at Redstone	imaging seekers, Redstone
1037	Technical Test Center (RTTC). DIRSP is Dravide in house support concept formul	a four year project with Initial Operational Capability (IOC) in FY 1999 aftion (New Initiatives) and engineering analysis to future instrumentation requirements.	
1166	Provide program management support		
801		gy Transfer (SBIR/STTR)	
• 259			
Total 36897	7		
FY 1997 Planned Program:		Binnels and MOD out and an animal and the second of the se	Joto
• 1408	Complete the instrumentation of the TW	II Link, high speed networking, and ethernet hub. Continue securing the FON 101 classified data	Luala
• 4000		Complete installation of PTA instrumentation, acquisition of second laser illuminator, complete Barricade C/Hi Velocity range instrumentation, and	mentation, and
• 11621		complete development of vehicle on-board data acquisition and sensors for the factor. Complete Phase I of WSMR TSN contract support and exercise option on Phase II to install Feeder cable on Eastern Backbone.	
• 2360			
Project D984	Pa	Page 7 of 10 Pages Exhibit R-2 (PE 0604759A)	759A)

RDT&E BUDGET ITEM JUSTIFIC	CATION		zknibit)	DATE March 1996	966
вирсет Астіvіту 6 - Management Support		PE NUMBER AND TITLE 0604759A Majo	PENUMBER AND TITLE 0604759A Major Test and Evaluation Investment	westment	PROJECT D984
FY 1997 Planned Program: (continued) 2427 Conclude the Army's portion of the GPS production contract for all Army test organizations. 207 Conclude capability for system level ATCCS EPLRS, and SINCGARS technical test at EPG. 2067 Award the engineering development contract for HSTSS at YPG. 4700 Continue implementation of the DIRSP project at RTTC. 2302 Provide in-house support, concept formulation and engineering analysis to future instrumentation requirements.	duction contract for a EPLRS, and SINCC for HSTSS at YPG. ect at RTTC. on and engineering a	fuction contract for all Army test organizations. EPLRS, and SINCGARS technical test at EPG. for HSTSS at YPG. ct at RTTC. n and engineering analysis to future instruments	t organizations. cal test at EPG. ure instrumentation requirements.	,	
Total 32197					
ary 1 (FY 1996) 1995)	EX 1995 24558 24042	FY 1996 37933	FY 1997 33830		
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	ર્સ !	37270 373	-1633		
FY 1996 President's Budget Current President's Budget Submit	24041	36897	32197		
Program Change Explanation: Funding: FY 97 reflects funds moved t	to higher prio	rity program (-{	ed to higher priority program (-800) and Revised Economic Assumption (-833)	1 (-833)	

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Project D984

Exhibit R-2 (PE 0604759A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE M	March 1996	(O
BUDGET ACTIVITY 6 - Management Support			PE NU 060	E NUMBER AND TITLE 0604759A Majo	E NUMBER AND TITLE 3604759A Major Test and Evaluation Investment	t and Eva	aluation	Investme		PROJECT D986
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D986 Major User Test Instrumentation	19961	23033	7105	3489	2538	4762	5839		Continuing	Continuing Continuing

data. MAIS will provide protocol data unit (PDU) transformation to link with Distributed Interactive Simulation (DIS). This data will provide objective assessment for new programmed in Other Procurement, Army appropriation. The Mobile Integrated Non-Intrusive Command, Control and Communications Instrumentation (MINI-C31) is the provide users the capability to measure the performance of hardware and personnel under realistic tactical conditions for large scale operations (up to 1830 players). The MAIS will instrument combat systems in the operational forces to provide Real Time Casualty Assessment (RTCA) and Time, Space, and Positioning Information (TSPI) instrumentation for Operational Testing (OT) and Force Development Testing and Experimentation (FDTE). The Mobile Automated Instrumentation Suite (MAIS) will lead instrumentation for the Army's digitization effort. The MINI-C3I system assesses the 21st Century's Armed Forces' ability to employ digital technology to obtain greater performance standards in lethality, survivability and tempo. It provides essential audio, video and digital information required for credible testing of command, A. Mission Description and Budget Item Justification: Project D986 - Major User Test Instrumentation: This project finances the development of major field materiel acquisition, force structuring, doctrine and tactics modification, and, through the Advanced Research Projects Agency (ARPA) PDU format, part of the DIS, provide data to validate the future DoD warfighting models and simulations. The MAIS, a non-major system acquisition, achieved Milestone I/II in FY 90. Current program (one control center and 131 player units) reaches Initial Operational Capability (IOC) in FY 1997. One additional control center and 469 player units are control and communications systems.

FY 1995 Accomplishments:

• 7319	Mobile Automated Instrumentation Suite (MAIS): Conducted initial player unit/command control and communication (C3) center Conducted hardware/software integration and subsystem level test; conducted initial player unit/command control and communication (C3) center
• 5500	integration and test. Conducted simulations/analysis to verify
9800	
• 200	
• 3342	
Total 19961	shelters, shelter racks and equipment.

Project D986

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Exhibit R-2 (PE 0604759A)

RDT&E BUDGET ITEM JUSTI	M JUSTIFICATIO	N SHEET (FICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0604759A Majo	ਮਸਦ Major Test and Evaluation Investment	PROJECT Investment D986
FY 1996 Planned Program:	bly and install equipment 1 test 1 test test arch/Science and Technolog not available for execution.	y Transfer (SBIR	/STTR)	,
97 Planned Pro 3403 1502 2000 200	ion Suite (MAIS): Ollector (FDC) to support A sercise portion of Division 3	rmy Force XXI dicles with necess	Mobile Automated Instrumentation Suite (MAIS): Support system operational test Initiate product refurbishment MINI C31 Design a miniature Field Data Collector (FDC) to support Army Force XXI design decisions and operational test and experiments. Instrument two additional mobile command and control vehicles with necessary instrumentation and hardware to collect digital, video and audio data to support the Command Post Exercise portion of Division XXI constructive experiment.	nd experiments.
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996	EX 1995 20394 19966 -5	EX 1996 23680 23266 -233	FY 1997 5077	
Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	1961	23033	7105	
Change Summary Explanation: Funding: FY 1997 increase support MINI-C31 acquisition (+2200) and Revised Economic Assumption (-172). Page 10 of 10 Pages Exhibit R-2	ncrease support MINI-C31 a	31 acquisition (+2200 Page 10 of 10 Pages) and Revised Economic Assumption Exhi	otion (-172). Exhibit R-2 (PE 0604759A)
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RDT&E BUDGET ITEM JUS	EM JUS		TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE M	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NL 060	PE NUMBER AND TITLE 0605103A Rand Arroyo Center	TILE and Arro	yo Cent	e.		ਰ ਹ	РRОЈЕСТ D732
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D732 Arroyo Center Support	15505	18356	21763	22138	22503	22923	23232		Continuing	Continuing Continuing

continuing effort to fund the Arroyo Center entirely within a single program element. Consolidation of Arroyo Center funding into one program element responds to year. To maintain this level of effort, the Army has been forced to supplement programmed funds with OMA funds -- not only in FY 1995 but also in FY 1994. For FY 1996, the Army will have to use supplemental funding once again to keep the stable level of effort at 104MTS. The FY 1997 program represents the Army's A. Mission Description and Budget Item Justification: This is a level-of-effort program based on a stable level of 104 Member of Technical Staff (MTS) per Centers (FFRDCs) for studies and analysis, such as Arroyo. Greater visibility and stability help both the Congress to oversee and the senior Army leadership to congressional direction, which seeks to ensure appropriate visibility and stability for the core work programs of Federally Funded Research and Development actively manage the FFRDC. This consolidation of funding will result in no increase in Arroyo center research activity or aggregate funding.

unique multidisciplinary capability for independent analysis. Although the Arroyo Center staff work with analysts in the Army's internal study program, the Arroyo analysis, which has operated at RAND since FY 1985. The Arroyo Center draws its researchers from RAND's staff of approximately 600 professionals trained in a consistent with the resource-constrained Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and Project Reliance. This program RAND's Washington DC office. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, which are projects. Each project requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a leadership deliberations on major issues. Arroyo Center research is sponsored by the Secretary of the Army, the Assistant Secretaries, the Chief of Staff and Vice supports decision making and resource allocation for general research and development and, since it is not allocated to a specific R&D mission, it is appropriately (Research, Development, and Acquisition). The ACPC reviews, monitors, and approves the annual Arroyo Center research plan as well as all individual research Technology. The RAND Arroyo Center research agenda is primarily focused on mid/long-term concerns. Results and analytical findings directly impact senior broad range of disciplines. About 90 percent of RAND's staff are located at the corporate headquarters in Santa Monica, California; the remainder are based at Chief of the Army, the Deputy Chiefs of Staff of the Army, and most of the Army's major commands. The Arroyo Center is provided guidance from the Army Center is an independent organization that provides analysis for both the Army and the broader national security community. Work in this program element is This program funds the RAND Arroyo Center, the Department of the Army's Federally Funded Research and Development Center (FFRDC) for studies and grouped in four major research areas or core capabilities: Strategy and Doctrine; Military Logistics; Manpower and Training; and Force Development and through the Arroyo Center Policy Committee (ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army funded in Budget Activity 6.

Project D732

Page 1 of 4 Pages

	RDTRE RIDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	12 12 12 12 12 12 12 12 12 12 12 12 12 1
BUDGET ACTIVITY 6 - Management Support		PROJECT D732
FY 1995 Accomplishments: 2020 Research West; ex	shments: Research addressing the nature of power in the future included examining the prospective relationship between emerging regional "great powers" and the West; exploring ways in which current U.S. Army strengths might be used to shape regional peacetime environments to prevent future conflicts; identifying East Asian nations most likely to make substantial advances in their qualitative military capability during the next ten years and drawing the	egional "great powers" and the event future conflicts;
• 4236	resulting implications for the Army; and, by focusing on the role of nuclear weapons in Indian and Pakistani grand strategies, indicating what kinds of nuclear deterrence doctrines and employment strategies may be utilized, what kinds of circumstances could result in nuclear use, and what these findings imply for U.S. strategic and military policy. Research addressing what Army forces should be and how they should operate included analyzing how broader range missions—spanning the spectrum from major regional contingencies to operations other than war—might be met by alternative Active-Reserve Component structures; evaluating the ongoing Bold Shift reserve training program and assisting in related efforts to develop new structures to support future Reserve Component training; examining the available mix of analytic tools and developing a framework for understanding how they fit into the Force XXI design process; assessing	es, indicating what kinds of inds of circumstances could ions—spanning the spectrum structures; evaluating the serve Component training;
1512	how the Army develops doctrine and force structure for its RSOI requirements in force-projection operations; and determining how to maximize interagency coordination and cooperation in the conduct of operations other than war outside the continental United States. Research addressing new systems and technologies the Army should acquire included assisting the Army in devising a technology development investment strategy that is consistent with the new demands and constraints it now faces; examining system technologies that can significantly enhance the force-projection capabilities of early-entry forces against current and future threats; developing approaches to experimental design for the most	ning how to maximize nology development nat can significantly enhance ental design for the most
2153	common analytic uses of Distributed Interactive Simulation (DIS); and clarifying the link between organizational incentives and the implementation of compounding efforts to streamline the Army procurement process and to encourage innovation and risk-taking on the part of acquisition managers. Research addressing how the Army should be manned included exploring areas related to future recruiting success; analyzing methods to attract high-quality personnel into the Active Component while encouraging them to join the Reserve Component after their active term; assessing historical and current data on ROTC participants and estimating potential effects of program changes on the characteristics of future ROTC cohorts; and determining the	ss and the implementation of quisition managers. ing methods to attract high- n; assessing historical and TC cohorts, and determining the
5584	extent and sources of current personnel turbulence and recommending policies to minimize the resulting readiness impediments. Research addressing how the Army should accomplish support functions included investigating strategies to reduce FORSCOM operating costs without risk to the installation's core mission; examining potential new structures for the total Army school system; providing Army decision makers with a logical framework for defining and defending policies about the contents, structure, and management of the sustainment support base; proposing a new concept for Army logistics—Velocity Management—aimed at dramatically improving the flow of materials through the logistics system; determining ways to make the Army logistics information more reliable and timely; redesigning in-theater distribution to improve the distribution pipeline's	nents. COM operating costs without by decision makers with a upport base; proposing a new gistics system; determining fistribution pipeline's
Total 15505	performance; and assisting the Army in identifying cost-effective methods for setting peacetime-operating and war-reserve stockage levels to achieve specified weapon system availability goals.	e stockage levels to achieve
Project D732	Page 2 of 4 Pages	Exhibit R-2 (PE 0605103A)
	1108	





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) DATE March 1996	
BUDGET ACTIVITY 6 - Management Support	PROJECT PROJECT PROJECT PROJECT PROJECT D732	ЕСТ 2
FY 1996 Planned Program: 1055 Research documer role in th	Program: Research addressing the geopolitical environment and its effects on the Army, including applying the Assumption-Based Planning process to documents defining Force XXI, relating critical assumptions in Army planning documents to current and planned programs, and analyzing the Army's role in the post Goldwater-Nichols DoD planning process with special attention to the need to stabilize funding for long-term experimentation and	my's I
• 1200	y plann ntial Ar nical im	is in
• 3590	Research addressing restructuring initiatives designed to make the Army more efficient, including identifying the means to alleviate potential problems with the Army's plans to fully digitize its forces; examining means of embedding the effects of information operations within constructive simulations; examining the joint implications of Force XXI to understand them in terms of joint doctrine and interoperability; building a knowledge base on the current state of Army logistics communications/information systems and developing and evaluating alternative approaches for improving logistics use	olems tions; e s use
	of communications and information in support of emerging Army initiatives; assessing the information warfare dimensions of a wide range of U.S. and U.N. operations other than war to assist the Army in writing doctrine, thinking about how it can best organize for such operations, and understanding the intelligence demands of such operations; and examining advanced technologies that have the potential to significantly enhance force-projection capabilities against current and future threats.	S. and ing
• 5474	Research addressing force composition, size, and operational concepts, including analysis of how future requirements such as heavy-force conflict, limited armed conflict, peacekeeping, humanitarian assistance missions, and domestic disaster relief might be met by alternative Active-Reserve structures; exploring areas related to future recruiting success; assessing the effects of major changes made to the Reserve Officer Training Corps scholarship program; developing quantitative methods for analyzing personnel movements and applying them to describe alternative ways in which the Army personnel system could operate; developing incentives and policies aimed at reducing personnel turnover in the Reserve Component; analyzing performance and resource requirements of strategic alternatives for the future total Army School system; examining alternative methods for allocating instructional staff and training development resources; designing and testing improved approaches and methods for training logistics command and control at higher echelons; and assessing the use of simulations for training at home stations and Combat Training Centers.	t, ch the zing tting id
1344	Research addressing alternative technology applications and technical strategies, including exploring opportunities for increased research collaborations with industry and government agencies to help the Army formulate an effective approach for managing R&D that will permit the exploitation of the best emerging technology now in the commercial sector; assessing the barriers to risk-taking in the Army acquisition system and recommending policy changes that will enhance the efficacy of acquisition reform; assessing the benefits and limitations of the decentralized military structures permitted by the proliferation of new information technologies to provide historical evidence for the development of Army doctrine; and assessing the military potential for structural changes now under way in commercial organizations in response to the information revolution, to give Army planners a better sense of the general military applicability of commercial developments to military organizations.	ations he oolicy ed by stter
Project D732	Page 3 of 4 Pages Exhibit R-2 (PE 0605103A)	
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	RDT&E BUDGET ITEM JUSTIFIC	STION		FICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	nt Support		PE NUMBER AND TITLE 0605103A RANC	PE NUMBER AND TITLE 0605103A Rand Arroyo Center	PROJECT D732
FY 1996 Planned P 5155 5156 - 410	FY 1996 Planned Program: (continued) 5155 Research addressing logistics, sustainment, and redesign initiatives, including conducting pilot implementations of "Velocity Management," aimed at dramatically improving the flow of materials through the logistics system and thereby improving responsiveness and lowering costs; determining whether centralized management and workloading of Army sustainment maintenance activities can provide acceptable readiness and weapon system availability at lower total cost, both in peacetime and wartime; developing and implementing alternatives to measure and improve performance related to materiel management and procurement functions; and evaluating and recommending alternatives for ensuring rapid and responsive distribution support both in peacetime and during contingencies. 410 Small Business Innovative Research/Science and Technology Transfer (SBIR/STTR) 820 Revised Economic Assumption not available for execution.	esign initiatively the logistic of Army sust of wartime; downwartime; downwartime; downwarting; and evaluation.	es, including construction and the sand the sament mainte eveloping and ing and recomnansfer (SBIR/S)	nducting pilot implementations of 'ereby improving responsiveness an nance activities can provide accepta mplementing alternatives to measurending alternatives for ensuring rapTR)	"Velocity Management," aimed at d lowering costs; determining ble readiness and weapon system e and improve performance related pid and responsive distribution
Total 18356					
FY 1997 Planned Program: • 1364 Research • 4357 Research • 6580 Research • 1705 Research • 6223 Research Total 21763	on the geopolitical environment and non strategy, military planning, and re non restructuring initiatives designed hon force composition, size, and oper hon alternative technology application hon logistics, sustainment, and redesigned	its effect on the Army. egional security. to make the Army mor ational concepts. s and technical strateg in initiatives.	лтиу. y more efficient trategies.		
B. Project Change Summary Previous President's Budget (FY 96) Appropriated Amount (FY 1995)	3	FY 1995 15838 15838 -333	FX 1996 21872	FY 1997 22355	
Adjustments to F 1 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY	Adjustments to F.T. 1993 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997)		18542	-592	
since FY 1996 President's Budge Current President's Budget Submit	***	15505	18356	21763	
Project D732		Page	Page 4 of 4 Pages	Ext	Exhibit R-2 (PE 0605103A)
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	rion St	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE M	March 1996	တ
BUDGET ACTIVITY 6 - Management Support			PE NU 0 0	PE NUMBER AND TITLE 0605301A Army Kwajalein Atoll	ritle rrmy Kwa	ıjalein A1	loll			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	157420	144439	136864	125739	120830	118886	118107		Continuing	Continuing Continuing
D614 US Army Kwajalein Atoll	153115	144439	136864	125739	120830	118886	118107		Continuing	Continuing
MAC2 Host Nation Compliance	4305	0	0	0	0	0	0		0	4305

Army Space surveillance and object identification, and National Aeronautics and Space Administration (NASA) scientific and space programs. Programs supported include Mission Description and Budget Item Justification: U.S. Army Kwajalein Atoll (USAKA) is a remote (located in the republic of the Marshall Islands), secure activity of Army missile defense, Ballistic Missile Defense Organization (BMDO) demonstration/validation tests, Air Force Intercontinental Ballistic Missile (ICBM) development and which consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, command/control/communications, and data reduction systems. These systems include the four unique radars of the Kiernan Reentry Measurement Site (KREMS), super Recording Automatic Digital Optical Tracker (RADOT) long range metric video tracking systems, high density data recorders for high data-rate telemetry, and sonobuoy missile impact location system data analysis and reduction hardware and software. USAKA is contractor operated and is therefore totally dependent upon its associated support contractors. Program also provides funds for the contractors to accomplish installation established/restructured RDTE, A Environmental Compliance program elements. Funding is in support of site installations or operations required for general research and Defense Act of 1991 to put in place a Ground Based Defense System by 2006 or earliest date possible. The technical element of USAKA is the Kwajalein Missile Range the Major Range and Test Facility Base as constituted by DoD Directive 3200.11. Its function is to support test and evaluation of major Army and DoD missile systems, operational tests, U.S. Space Surveillance Network, and NASA Space Transportation System (Shuttle) and orbital debris experiments. USAKA supports the Missile operation and maintenance. In accordance with OSD guidance, Host Nation Compliance resources (Project MAC2) have been realigned to the newly development, not allocable to specific R&D missions. This type of activity is appropriately funded in Budget Activity 6.

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RDT&E BUDGET ITEM JUST	EN JUS	TECA		TIFICATION SHEET (R-2 Exhibit)	2 Expi		o na de región de la	DAIE	March 1996	ဖ
RIDGET ACTIVITY	enselvens Green.		PEN	PE NUMBER AND TITLE	TLE					PROJECT
6 - Management Support			090	0605301A Army Kwajalein Atoll	irmy Kwa	ijalein At	-			D614
		Parket State (State) in the state of the st		300	0007	2000	EV 2001		Coet to	Total Cost
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	Estimate	Estimate	Estimate	Estimate			
D614 US Army Kwajalein Atoll	153115	144439	136864	125739	120830	118886	118107		Continuing	Sontinuing Continuing
		AND THE RESERVE THE PROPERTY OF THE PARTY OF	The state of the s	And the state of t	Commence of the second	THE PERSONNELS AND PROPERTY OF THE PERSONNELS	Control of the Contro	egy en 'n egypping beginnen en	The second contract of	

terminal trajectory. BMDO programs require range sensors to collect technical data in support of programs being conducted at USAKA. These test data cannot be obtained Research Project Agency (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), located at USAKA, is one of only three sensors world-wide that has deepspace tracking capability. Programs supported include Air Force programs Peacekeeper, Minuteman III, and Delta; Army/BMDO's Strategic Target System (STARS), Program, Small Expendable Deployer System and Orbital Debris Radar Calibration Spheres, along with the Air Force Space and Missile Center's associated programs. A. Mission Description and Justification: Project D614 - US Army Kwajalein Atoll: The Army, Air Force, Navy and BMDO have programs planned which have except through the use of technical facilities available on and in the vicinity of USAKA. Data collection on objects in space remains significant because the Advanced Midcourse Space Experiment (MSX), and Theater Missile Defense (TMD) requirements; NASA's Space Transportation System (STS), Orbital Debris Measurement significant test and data gathering requirements at USAKA. Air Force programs require firing at full range with complete data collection during late mid-course and

FY 1995 Accomplishments:

- Management support (salaries, training, travel, Space and Strategic Defense Command (SSDC) matrix support, etc.
 - Accomplished maintenance and repair projects (Repair roofs, unaccompanied personnel housing). 1266
 - Procured petroleum, oil and lubricants (POL). 1200
 - Procured other mission operating supplies. 8964
- Provided air and sea transportation (cargo to and from continental United States). 7538
- Continued to support Army, BMDO, NASA, and Air Force developmental and operational missile testing. Completed integration of range technical Continued improvement and modernization of non-major and sustaining range instrumentation and facilities. 3827
 - support contract efforts. 13860
- Provided logistical support to self contained islands of USAKA. 54969
- Continued physical security support and upgrades to existing USAKA facilities. 383
 - Procured Commercial Equipment and Non-Tactical Vehicles 826
- 153115

FY 1996 Planned Program:

- Management support (salaries, training, travel, SSDC matrix support, etc.) 7847
- Accomplish maintenance and repair projects (runway repairs, unaccompanied personnel housing). 9937
- Procure POL. 10822
- Procure other mission operating supplies.

Project D614



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	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	(-2 Exhibit) DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605301A Army	PE NUMBER AND TITLE 0605301A Army Kwajalein Atoll	Р ROJECT D614
FY 1996 Planned P 6 6537 9 3049 47038 9 42789 6 541 1017 Total 144439	 FY 1996 Planned Program: (continued) 6537 Provide air and sea transportation (cargo to and from continental United States). 3049 Continue improvement and modernization of non-major and sustaining range instrumentation and facilities. 47038 Continue to support Army, BMDO, NASA, and Air Force developmental and operational missile testing. Continue integration of range technical support contract effort. Develop Alternate Launch Site to support Tactical Missile Defense (TMD). 42789 Provide logistical support to self contained islands of USAKA. 541 Continue physical security support and upgrades to existing USAKA facilities. 3100 SBIR/STTR. 1017 Revised Economic Assumption not available for execution. 	o and from continental United States to finon-major and sustaining range it, and Air Force developmental and a Launch Site to support Tactical Missiands of USAKA. grades to existing USAKA facilities. ble for execution.). nstrumentation and facilities. operational missile testing. Continue integrati sile Defense (TMD).	on of range technical
FY 1997 Planned Program:	ement support (salaries, training, trainish maintenance and repair projection by POL. other mission operating supplies. air and sea transportation (cargo te improvement and modernization te to support Army, BMDO, NAS. contract effort. logistical support to self containe te physical security support and up	avel, SSDC matrix support, etc.). cts (runway repairs. unaccompanied pe to and from continental United States). n of non-major and sustaining range in: A, and Air Force developmental and og d islands of USAKA. grades to existing USAKA facilities.	personnel housing).). nstrumentation and facilities. operational missile testing. Continue integratic	n of range technical
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996	Summary Budget (FY 1996) 157140 Int (FY 1995) 153971 Int (FY 1996) 185971 Int (FY 1996) 1896	EY 1996 149769 145897 -1458	<u>FX 1997</u> 143798	
Adjustments to Budget Year (FY 1) FY 1996 President's Budget Current President's Budget Submit	997) since	144439	-6934	
Project D614	Pa	Page 3 of 6 Pages	EXNIBIT K-Z (PE UBUS3UTA)	E UbubautA)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY PE NUMBER AND TITLE	PROJECT
6 - Management Support	500

Change Summary Explanation:
Funding: FY 1995: Below threshold reprogramming
Funding: FY 1996: A portion of this program has been reduced for an amount which reflects revised economic assumptions and/or may be offered for rescission.
FY 1997: (-3425) Realigned to Space Applications Technology Program; (-3509).

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Project D614





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 000	PE NUMBER AND TITLE 0605301A Army Kwajalein Atoll	TITLE Vrmy Kwa	ıjalein At	toll		.	PROJECT MAC2
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MAC2 Host Nation Compliance	4305	0	0	0	0	0	0		0	4305
INTEREST OF STATE OF	,	5777	Took Motion		A TICALL	Dogwood,	for this nex	010 0101	od to find loa	11.

mandated environmental compliance activities including host nation and U.S. environmental laws and regulations. Resources for this program to provide continued funding of environmental compliance issues and disposal of hazardous waste at USAKA have been realigned to PE's 0605853A, 0605854A, and 0605856A for FY 96 through FY 01. A. Mission Description and Budget Item Justification: Project MAC2 - Host Nation Compliance - USAKA: Resources for this program are used to fund legally

FY 1995 Accomplishments:

- Continued support of Logistic Support Contractor Environmental Compliance Oversight Program.
 - Continued shipment of hazardous wastes to off-island disposal.
- Continued testing of materials to determine hazardous characteristics as required by regulation.
- Continued identification, removal, and off-island disposal of asbestos containing materials. 92
- Operated solid waste incinerators procured under the Productivity Capital Investment Program. 238
- Performed periodic testing of wastewater discharge to establish compliance with Clean Water Act requirements. Continued identification, removal, and off-island disposal of PCB dielectric fluids and equipment.
 - Continued potable water testing to ensure protection of public health and Safe Drinking Water Act compliance.
- Continued training of USAKA environmental staff to maintain current knowledge of compliance regulations. 719 60 100 60
 - Characterize and cleaned up fuel and oil contamination. 325
- Maintained hazardous materials dispensing and staging area to comply with regulations.
 - Continued ozone depleting chemical reduction program. 50 75 188
- Continued inventory of existing air emissions and baseline air quality modeling to support air analysis impact. Established a program to replace HALON fire suppression systems.
 - Continued compliance monitoring of underground storage tanks.
- Continued to support Republic of Marshall Islands Environmental Protection Agency travel in support of USAKA environmental standards
- Completed design for and construction of compliant pesticide control and management facilities. 270 4305
 - Total

FY 1996 Planned Program: Funds realigned to PE's 0605853A, 0605854A, and 0605856A effective FY 96.

Project MAC2

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DE SONO	(R-2 Exhibit)	DATE March 1996
вирсет Астіvіту 6 - Management Support	PE NUMBER AND TITLE 0605301A Army	отите Army Kwajalein Atoll	PROJECT WAC2
FY 1997 Planned Program: Funds realigned to PE's 0605853A, 0605854A,)605854A, and 0605856A effective FY 96.	ective FY 96.	in the second se
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget	FY 1996 0	FX 1997 0	
ding: FY 1995: Below Threshold Ro			
Project MAC2	Page 6 of 6 Pages	EX	Exhibit R-2 (PE 0605301A)
	1116		





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	FION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605601A Army	TITLE Army Tes	PE NUMBER AND TITLE OCCOSED A Army Test Ranges and Facilities	and Fac	ilities		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	153336	143347	133012	122793	125317	118490	120873		Continuing	Continuing
DE90 Yuma Proving Ground	24578	22185	17418	15560	17305	15174	15911		Continuing	Continuing
DE91 Aberdeen Test Center	37152	36378	35172	34161	34790	33041	33276		Continuing	Continuing
DE92 Dugway Proving Ground	12112	13302	0	0	0	0	0		Continuing	Continuing
DE93 White Sands Missile Range	60471	51766	61233	57883	57878	54306	55126		Continuing	Continuing
D618 Aviation Technical Test Center	13078	14033	12826	9074	8659	9460	9848		Continuing	Continuing
D630 TECOM Test Design and Evaluation	3892	4623	4785	4937	5094	5249	5409		Continuing	Continuing
D632 Redstone Technical Test Center	2053	1060	1578	1178	1591	1260	1303		Continuing	Continuing
Mission Description and Budget Item Justification: Sustains a production within the acquisition cycle at four Major Range and Dugway Proving Ground, UT; White Sands Missile Range, NM.	n: Sustains a r Range and Range, NM.	technical tes Fest Facility This PE als	et capability Bases: Yun o sustains a	for testing L na Proving (technical tes	OoD materiel Ground, AZ; t capability	, weapons an Aberdeen T at: Aviation	nd weapons est Center, / Fechnical Te	systems fron Aberdeen Pr est Center, F	technical test capability for testing DoD materiel, weapons and weapons systems from concept through Test Facility Bases: Yuma Proving Ground, AZ; Aberdeen Test Center, Aberdeen Proving Ground, MD; This PE also sustains a technical test capability at: Aviation Technical Test Center, Fort Rucker AL; and	ough 1, MD; L; and

Redstone Technical Test Center, Redstone Arsenal, AL; and a capability to perform test design and assessment functions. Technical test capabilities at each test range have ground vehicles, gun munitions, electric guns, surface to air missiles, and chemical/biological testing. This initiative is currently supported by the service Vice Chiefs of Staff in their role as the T&E Board of Directors. This PE finances indirect test operating costs not billable to test customers, replacement of test equipment and test facility be transferred to DoD PE 0605384, Chemical and Biological Defense Program. Test range support operations are required for general research and development; therefore, managers. This PE also includes personnel costs to downsize the workforce commensurate with the T&E workload reductions. Effective with FY 1997, Project DE92 will advances. This PE does not finance reimbursable costs directly identified to a user of these ranges; these direct costs are borne by materiel developers and project/product been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, and quality of materiel in development and in production. Program funding includes efforts toward fielded weapons systems. As part of the DoD RELIANCE initiative, the Army (via this PE) has committed at the highest senior service levels to be the lead agency for Current testing capabilities are not duplicated within DoD and represent baseline requirements to assure acceptable risk to the soldier as new technologies emerge into leveraging technologies to include procurement of essential equipment, personnel training and facility modernization to support the warfighter's testing requirements. modernization projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological this PE is appropriate for inclusion in Budget Activity 6.

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Exhibit R-2 (PE 0605601A)

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RDT&E BUDGET ITEM JUST			200		FICATION SHEET (R-2 Exhibit)			DATE	March 1996	ර ව
BUDGET ACTIVITY 6 - Management Support	Source of the first that the state of the st		PE N	PE NUMBER AND TITLE 0605601A Army	ENUMBER AND TITLE D605601A Army Test Ranges and Facilities	i Ranges	and Fac	ii (tes	ā Q	Р R ОЈЕСТ DE90
COST (In Thousands) FY 1995 FActual E	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE90 Yuma Proving Ground 24578	24578	22185	17418	15560	17305	15174	15911		Continuing	Continuing Continuing

program includes support of development and production acceptance testing to determine the effects of extreme cold weather, wind, and snow on the performance of weapons Ground in FY 95 under the Base Realignment and Closure Act (BRAC). Effective with FY 95, YPG assumed management of all extreme natural environment testing (desert, Secretary of the Army to have the consolidation take place at Fort Rucker, AL but with aerial weapons testing to remain at YPG. A portion of the funding has therefore been cold weather, and tropic) with no change in physical locations (tropic testing will continue in Panama and cold weather testing in Alaska), but with reduced management and manpower to support streamlined test operations. Cold Regions Test Activity (CRTA), Fort Greeley, AK is the only cold region environmental test center within DoD. This the portion of aviation testing currently managed by Aviation Technical Test Center (ATTC), Ft. Rucker, Alabama and Edwards AFB, California to YPG was revised by the include an artillery firing range; Army's only air-to-ground aircraft armament range with precision real-time instrumentation; the Army's only weapons accuracy range with systems and materiel in full operation and the man/materiel interface as well as the performance of extreme cold weather specific equipment. The Army plan to consolidate conduct, analyze, and report the results of development and other tests of aircraft armament, long-range cannon artillery, air delivery, and mobility systems. Major facilities delivery and desert test range. Vast tracts of varied desert terrain provide testers with conditions found in the Middle East and other desert areas. YPG's mission is to plan, primary test site for electromagnetic/electrothermal gun systems under Project Reliance. Under Reliance, YPG is also designated as the primary site for the conduct of indirect fire gun munitions and a specialty site for land vehicle testing. YPG assumed the full munitions production acceptance testing mission from Jefferson Proving actual targets for testing direct fire aircrast and weapons; an instrumented air delivery test area; and desert and dust mobility test areas. YPG is designated as the DoD A. Mission Description and Budget Item Justification: Project DE90 Yuma Proving Ground: Yuma Proving Ground (YPG), AZ is DoD's primary artillery, air realigned from project DE90 to project D618.

Project DE90

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
вироет астічіту 6 - Management Support	t Support	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	PROJECT IIIties DE90
FY 1995 Accomplishments: • 24578 458 tes Tires/V Field A Desert Clothir Desert Effecti and YF modern aspects Comm Total 24578	ts were conducted. The largest 20 Wheels for Tactical Trucks & Trails trillery System, USMC Light Arm Testing, LONGBOW APACHE, N Ig System, German SP2000 Howit Storm Improvements, Battleffeld C we with FY 95, the transfer of the Jog also assumed management for a nize test facilities and equipment to of test operations. Modernization unications Upgrade; Construction ng & Validation System; Procurem	system level programs were: 51. Air Force C-17 Transport - Army Interface, M230 Chain Gun, M489 105mm Projectile, CRUSADER orded Vehicle, XT166 Tank Track, Advanced Precision Airborne Delivery System, M1A2 ABRAMS Tanh 4929, 120mm mortar smoke cartridge, T154 Tank Track, TOW 2A & 2B Missile, Extended Cold Weather Ser, M1A1 ABRAMS Tank Desert Testing, M284 Cannon Assembly, BRADLEY Fighting Vehicle System, Sombat ID System, Wide Area Mine (WAM). 6 Eferson Proving Ground ammunition acceptance testing mission to Yuma Proving Ground was completed an antimal environment testing (desert, cold weather, and tropics). Institutional funds were also used to maintain current test capabilities and improve the safety, environmental, efficiency, and technological projects accomplished were: renovation of Castle Dome Heliport; Gun Position 15 Improvements; Range 10 Ton crane for instrumentation repair; procurement of M242 Fire Control Equipment; Terrain Elevation tent of high capacity workstations; vibration test facility improvements.	O5mm Projectile, CRUSADER System, M1A2 ABRAMS Tank Aissile, Extended Cold Weather DLEY Fighting Vehicle System Proving Ground was completed, mal funds were also used to fficiency, and technological ition 15 Improvements; Range I Equipment; Terrain Elevation
FY 1996 Planned Program: 22014 Some o Surviva Instituti environ Total 22185	of the largest system level programible Tire Test, CRUSADER Field ional funds are also to be used to rumental, efficiency, and technologi Economic Assumption not avails	s to be tested are: Artillery System, USMC Light Armored Vehicle, C17 Aircraft - Army Interface, VOLCANO Mine nodernize test facilities and equipment to maintain current test capabilities and improve the safety, ical aspects of test operations. ble for execution.	rface, VOLCANO Mine and improve the safety,
FY 1997 Planned Program: 17418 Key tes Aircraf Instituti environ	ogram: Key test programs will be: COMANCHE; 2nd Generation FLIR; Ground Combat Identification; Air Drop Equipment Advanced Developments; Aircraft Survivability Equipment; CRUSADER Field Artillery System (AFAS); Field Artillery Resupply Vehicle (FARV) Advanced Development Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.	TIR; Ground Combat Identification; Air Drop Equipmery System (AFAS); Field Artillery Resupply Vehicle (Fities and equipment to maintain current test capabilities operations.	nt Advanced Developments; ARV) Advanced Development and improve the safety,
Project DE90	Pag	Page 3 of 18 Pages Exhibit	Exhibit R-2 (PE 0605601A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		FICATION SHEET (R-2 E		DATE March 1996
-	Over the Company of t	I PE NUMBER AND TITLE) TITE	PROJECT
Budget Activity 6 - Management Support		0605601A	0605601A Army Test Ranges and Facilities	lities DE90
D Deciset Change Summary	FY 1995	FY 1996	FY 1997	
Dravious President's Budget (FY 1996)	20655	22801	36145	
Appropriated Amount (FY 1995)	20604			
Adjustments to FY 1995	+3974			
Annountiated Amount (FV 1996)		22402		
Applopriated Amount (x x x x x x x x x x x x x x x x x x x		-217		
Adjustments to F 1 1990 Adjustments to Budget Year (FY 1997) since			-18727	
To 1006 Dravident's Burdoet				
Current President's Budget Submit	24578	22185	17418	
Change Summary Explanation:		2 to 1 to	. The contraction of the second second second second second second (\$5.901) and	ce with workload (\$5,901) and

Funding: FY 95 aligns guidance with workload and prioritized TECOM test facility modernization projects. FY97 aligns guidance with workload (\$5,901) and with Secretary of Army decision to maintain aviation testing capability at Fort Rucker, Alabama (\$12,826).

Exhibit R-2 (PE 0605601A)

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE IV	March 1996	မွ
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	ritle Irmy Test	t Ranges	and Fac	ilities	ā ()	PROJECT DE91
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE91 Aberdeen Test Center	37152	36378	35172	34161	34790	33041	33276		Continuing	Continuing Continuing

launch facility, underwater test facility for the conduct of tests for surface and subsurface ship structures (Navy support), and a number of special test laboratories. Includes ATC is designated as primary test site for land vehicle and direct fire gun munitions testing. ATC is responsible for conducting development tests of weapons and weapon Activity, Aberdeen Proving Ground, MD is DoD's designated lead agency for land vehicle testing and Congressionally mandated live fire testing. Under Project Reliance, A. Mission Description and Budget Item Justification Project DE91 Aberdeen Test Center: Aberdeen Test Center (ATC), formerly know as Combat Systems Test engineer equipment; and troop support and individual equipment. ATC is the DoD tester for vulnerability/lethality of Army systems. Major facilities include the Munson systems; munitions and components; survey and target acquisition equipment; combat, special, and general purpose vehicles and ancillary automotive equipment; combat vehicle test facility, moving target projection facility, live fire evasive target, armor/anti-armor depleted uranium containment facility (Super Box), the elevated rail threat automotive test courses, firing ranges addressing a wide variety of firing capabilities, cross-country automotive test sites, a radar tracking site facility, a unique robotic personnel costs to downsize the workforce commensurate with the T&E workload

FY 1995 Accomplishments:

37152 614 tests were conducted. The largest 20 systems level programs were

Cannons, USMC Advanced Amphibious Assault Vehicle, Lightweight Tactical Generators, Improved Ribbon Bridge, M900E1, 105mm, APFSDS-T Mobility Trailer, Driver's Night Vision Enhancer, M830A1 HEAT-MP-T Cartridge, MAPS/GPS Hybrid Position Location System, M256, 120mm Armored Gun System, Family of Medium Tactical Vehicles (FMTV), Navy Ship Structures Program, M1A1 ABRAMS Tank, M1A1 ABRAMS Fank, M1A2 ABRAMS Tank, Halon Substitutes for Automatic Fire Extinguishers, M829A2, 122mm cartridge, M44A2 Extended Service Life Program, BRADLEY Fighting Vehicle System, M1022 Mobilizer Dolly Set, High Mobility Multipurpose Wheeled Vehicle (HMMWV), High

environmental, efficiency, and technological aspects of test operations. Modernization projects included: Test Site Sediment and Erosion Control; Industrial X-Ray Building Improvements; Main Firing Barricade Upgrades; Virtual Test Environments; Multiple On-Board Location & Status Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, Integration Systems.

Total 37152

Project DE91

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FY 1996 Planned Program: • 35123 Some of the largest systems level programs to be tested are: • 1312 Some of the largest systems level programs to be tested are: • 1312 Some of the largest systems level programs to be tested are: • 1312 Some of the largest systems level programs to be tested are: • 1313 Some of the system of the systems of the systems programmed for testing are: • 1380 Revised Economic Assumption not available for Execution. • 1381 Pry 1997 Planned Program: • 1382 Revised Economic Assumption not available for Execution. • 1383 Revised Economic Assumption not available for Execution. • 1384 Advanced Tank Armanents; SEA WOLF Hall Shructure Shock Tests, MIA1 Block Improvement Program; Ground Combat Identification; MIA2 Advanced Tank Armanents; SEA WOLF Hall Shructure Shock Tests, MIA1 Block Improvement Program; Ground Combat Identification; MIA2 Advanced Tank Armanents; SEA WOLF Hall Shructure Shock Tests, MIA1 Block Improvement Program; Ground Combat Identification; MIA2 Advanced Tank Armanents; SEA MOLF Hall Shructure Shock Tests, MIA1 Block Improvement Program; Ground Combat Identification; MIA2 Advanced Tank Armanents; SEA Molfell Shructure Shock Tests, MIA1 Block Introductions of the systems of the system	KUGE BUUGE IEN JUSTIFICATUR STEET (R-2 EXIIBIL) MATCH 1996
FY 1996 Planned Program: Navy Ship Structures Program: Navy Ship Structures Program: Navy Ship Structures Program, M1A2 ABRAMS Tank, Armored Gun System Closeout Testing, 120mm I Vehicle System Institutional funds are also to be used to modernize test facilities and equipment to maintain current test can environmental, efficiency, and technological aspects of test operations. 280 Revised Economic Assumption not available for Execution. Total 36378 Presonnel downsizing costs. Some of the systems programmed for testing are: Advanced Tank, Halon Substitutes for Automatic Fire Extinguishers. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test can environmental, efficiency, and technological aspects of test operations. EV 1997 Planned Program: Some of the systems programmed for testing are: Institutional funds are also to be used to modernize test facilities and equipment to maintain current test can environmental, efficiency, and technological aspects of test operations. Some of the systems programmed for testing are: Institutional funds are also to be used to modernize test facilities and equipment to maintain current test can environmental, efficiency, and technological aspects of test operations. Some of the systems programmed for testing are: Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Submit Some of the systems programmed for testing are: Some of the systems for Budget Year (FY 1997) since FY 1996 President's Budget Submit 37152 37152	-
FY 1997 Planned Program: a 34547 Some of the systems programmed for testing are: Advanced Tank Armaments; SEA WOLF Hull Structure Shock Tests; MIA1 Block Improvement Program ABRAMS Tank; Halon Substitutes for Automatic Fire Extinguishers. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test cenvironmental, efficiency, and technological aspects of test operations. o 625 Personnel downsizing costs. Total 35172 B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Appropriated Amount (FY 1995) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Current President's Budget Current President's Budget Submit	rograms to be tested are: A2 ABRAMS Tank, Armored Gun System Closeout Testing, 120mm Mortar System, BRADLEY Fig ed to modernize test facilities and equipment to maintain current test capabilities and improve the safe nological aspects of test operations. available for Execution.
FY 1995 FY 1996 FX 40649 37388 40649 37388 3407 36734 36734 37152 36378	or testing are: WOLF Hull Structure Shock Tests; M1A1 Block Improvement Program; Ground Combat Identificatic for Automatic Fire Extinguishers. ed to modernize test facilities and equipment to maintain current test capabilities and improve the safe nological aspects of test operations.
-356 1997) since 11t 37152 36378	EX 1996 37388 36734
37152 36378	
Change Summary Explanation: Fy 95 aligns guidance with workload and prioritized TECOM investment projects. FY 97 aligns guidance with workload.	37152 36378 35172 and prioritized TECOM investment projects. FY97 aligns guidance with workload.
Project DE91	Page 6 of 18 Pages Exhibit R-2 (PE 0605601A)





	Belling	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SE	HEET (R	-2 Exhil	oit)		DATE N	March 1996	ဖ
BUDGET ACTIVITY 6 - Managen	тілітү I gemer	вироет АстіvітY 6 - Management Support			PE NL 060	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	ITLE rmy Test	t Ranges	and Fac	ilities	a u	PROJECT DE92
	Ō	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE92 Dugw	Dugway Proving Ground	j Ground	12112	13302	0	0	0	0	0		Continuing	Continuing
A. Mission test facility i improvemen support for I 1997, this pr	Descript under Pro it tests of DoD agen roject will	A. Mission Description and Budget Item Justification: Project DE92 Dugway Proving Ground: Dugway Proving Ground (DPG), UT, is the DoD designated primary test facility under Project Reliance for Chemical/Biological defense testing. This project provides for maintaining a capability for development, production, and product improvement tests of chemical/biological defense systems and smoke munitions systems; battle field obscurant/smoke testing; and chemical biological defense (CBD) support for DoD agencies and treaty compliance. Includes personnel costs to downsize the workforce commensurate with the T&E workload reductions. Effective with FY 1997, this project will be transferred to DoD in accordance with PL 103-160.	tion: Projet logical defenstems and sm schools persor dance with F	et DE92 Dug se testing. T loke munitio mel costs to L 103-160.	yway Provii his project I ns systems; downsize th	ng Ground: provides for battle field o	Dugway Pr maintaining obscurant/sm commensura	oving Grour a capability oke testing; ate with the	nd (DPG), U for develop and chemic T&E workk	T, is the Do ment, produ al biological vad reduction	D designatec ction, and pri defense (CB ns. Effective	primary oduct D) with FY
FY 1995 Accomplishments: 12112 200 tess Joint Cl Sensing Biologi Protect Cartrid Clouds Institut	ccomplis 12112	hier times to the largest 20 systems level programs were: Joint Chemical/Biological Point of Contact, Advanced Chemical/Biological Battledress Overgarment, Munitions Management Device, M21 Remote Sensing Chemical Agent Alarm, Self-Contained Toxic Environmental Protective Overgarment, Chemical Warfare Convention Treaty Support, Biological Integrated Detection System, M58 Mechanized Smoke Generating System, M81 Screening Grenade, Chemically and Biologically Protected Shelter, XM94 Long Range Biological Standoff Detection System, Lightweight Standoff Chemical Agent Detector, M929, 120mm Smoke Cartridge, M734E1 Fuze, M93 NBC Recon Vehicle, M819, 81mm Red Phosphorous Cartridge, Characterization of Visual, IR, and MM Smoke Clouds, M721, 60mm Illumination Cartridge, Standardized Integrated Command Post System, Improved Chemical Agent Point Detector. Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental efficiency, and technological aspects of fest operations.	e largest 20 s nt of Contact m, Self-Cont n System, M g Range Biol 3 NBC Recot ation Cartrid sed to moder	ystems level i, Advanced ained Toxic 58 Mechaniz ogical Stand oge, Standard nize test faci	programs v Chemical/B Environmer zed Smoke (off Detectio 819, 81mm ized Integral	vere: iological Bat ital Protectiv Generating S n System, Li Red Phosph ted Comman quipment to a	tledress Ove e Overgarm, ystem, M81 ghtweight S orous Cartrio d Post Syste	rgarment, Nent, Chemic Screening C tandoff Chei dge, Charact m, Improve	funitions Marfare Carenade, Chemical Agent erization of ed Chemical abilities and	anagement I Convention 7 Imically and Detector, N Visual, IR, a Agent Point improve the	Device, M21 Freaty Suppo I Biologically 1929, 120mr and MM Smc t Detector.	Remote rt, r Smoke rke
Total	12112	on a month of the control of the con		to cood on in								anne poblika (Alexande)
FY 1996 Planned Program:	12664 12664 12664 526 102 13302	Some of the largest system level programs to be tested are: Some of the largest system level programs to be tested are: Joint Chemical Biological Point of Contact, Chemical Warfare Treaty Support, XM22 Automatic Chemical Agent Alarm, Advanced Chemical Biological Battledress Overgarment, M56 Smoke Generating System. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations. Personnel downsizing costs SBIR/STTR Revised Economic Assumption not available for execution.	vel programs nt of Contact rment, M56; be used to m I technologic n not availab	to be tested are: ;, Chemical War Smoke Generati odernize test fac al aspects of test	are: Warfare Tre: rating Syste facilities an 'test operatio	aty Support, m. id equipment ons.	XM22 Auto : to maintain	matic Chem current test	ical Agent ∤ capabilities	Narm, Adva and improv	nced Chemic e the safety,	.aV
Project DE92	92				Page 7 of 18 Pages	'8 Pages			Exhibi	Exhibit R-2 (PE 0605601A))605601A)	

RDT&E BUDGET ITEM JUSTII	FICATION SHEET (R-2 Exhibit)		.2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	PE	PE NUMBER AND TITLE 0605601A Arm	TITLE Army Test Ranges and Facilities	nd Facilities	PROJECT DE92
FY 1997 Planned Program: Effective with FY97 this project is t	iransferred to Dol	D PE 0605384	transferred to DoD PE 0605384 in accordance Public Law 103-160.	103-160.	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)		FY 1996 13671	FX 1997 11159		
Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	+515	13432 -130	-11159		
FY 1996 President's Budget Current President's Budget Submit	12112	13302	0		
Change Summary Explanation: Project transferred to DoD	effective FY 1997.				
Project DF92	Page 8	Page 8 of 18 Pages		Exhibit R-2 (PE 0605601A)	5601A)
		1124			
	ONCE	UNCLASIFIED			



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	TITLE Vrmy Test	t Ranges	and Fac	ilities		PROJECT DE93
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE93 White Sands Missile Range	60471	51766	61233	57883	57878	54306	55126		Continuing	Continuing Continuing

It is the DoD designated primary test facility for overland surface-to-air and surface-to-surface missile testing and nuclear effects under Project Reliance. Launch complexes consolidated under WSMR. Electronic Proving Ground (EPG), Fort Huachuca, AZ, is unique within DoD because of the electromagnetically "clean" environment, extensive Missions Report. WSMR facilities and services are extensively utilized by the Tri-Services, National Aeronautics and Space Administration, and other government agencies facilities, full spectrum nuclear effects facilities (i.e., radiation, thermal, blast, electromagnetic pulse), temperature, shock, vibration, and electromagnetic effects, and a fully purpose, overland test range within DoD. This project provides for testing of ballistic and guided missiles, air defense systems, and artillery missile systems for all services. facility, an unmanned aerial vehicle test facility, antenna test facility, Electro-Magnetic Interference (EMI)/Electro-Magnetic Compatibility (EMC)/TEMPEST test facility, environmental test facility, a systems test facility, a systems interoperability and computer software testing facility, an electronic realistic battlefield environmental facility, intelligence, and electronic warfare equipment and systems. EPG operates an electro-magnetic environment test facility, and electronic countermeasures vulnerability test A. Mission Description and Budget Item Justification: Project DE93 White Sands Missile Range: White Sands Missile Range (WSMR), NM, is the largest, multiare integrated into a modern, real-time data collection and data reduction processing system. Facilities include optical and calibration laboratories, inertial guidance test landlocked/secure test missile flight facility. This project also provides for development of the Combat Synthetic Test and Training Assessment Range which recently and includes support to the High Energy Laser Systems Test Facility located at WSMR. Effective FY 95, management of the Electronic Proving Ground (DE94) was demonstrated the dual use of WSMR's assets and capabilities between test and training ranges in accordance with the Chairman of the Joint Chiefs of Staff Roles and eal estate, low annual rainfall, and special facilities required to perform development tests for communications, command and control, optical/electro-optical, signal communication test facility and an electro-optical systems test facility. The mission of creating, developing, and maintaining data bases at EPG for standard tactical deployment scenarios for electromagnetic capability and vulnerability will be continued.

Project DE93

Page 9 of 18 Pages

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit) DATE March	1996
BUDGET ACTIVITY 6 - Management Support	tSupport	PENUMBER AND TITLE 0605601A Army Test Ranges and Facilities	PROJECT DE93
S Accomplish 60471	ments: 407 tests were conducted. The largest 20 systems level programs were: PATRIOT Advanced Configuration, USAF Avionics Development Prof (THAAD), Theater Missile Defense (TMD), Army Tactical Missile Sys Unmanned Aerial Vehicle, Intelligence and Electronic Warfare Tactical (GPS) Receivers, USAF Advanced Medium Range Air to Air Missile (AICCS), Single Channel Ground/Air Radio System (SINCGARS), Grustitutional funds were also used to modernize test facilities and equippenvironmental, efficiency, and technological aspects of test operations. Generation Software; Ballistic Missile Command and Control System in Network; Upgrade for Distributed Node Network Hub; Distributed Noc Control System; Safety Berms; Explosives Building Upgrades.	ments: 407 tests were conducted. The largest 20 systems level programs were: PATRIOT Advanced Configuration, USAF Avionics Development Program, Multiple Launch Rocket System, Theater High Altitude Area Defense (THAAD), Theater Missile Defense (TMD), Army Tactical Missile System, Enhanced Position Location Reporting System (EPLRS), Joint Tactical Unmanned Aerial Vehicle, Intelligence and Electronic Warfare Tactical Proficiency Trainer, HAWK Missile System, Global Positioning System (GPS) Receivers, USAF Advanced Medium Range Air to Air Missile (AMRAAM), Navy Research Rockets, Line-of Sight Anti-Tank (LOSAT) Missile, Navy STANDARD Missile, Brilliant Anti-Armor Terminally Guided Munition (BAT), Army Tactical Command & Control System (ATCCS), Single Channel Ground/Air Radio System (SINCGARS), Ground Based Sensor, Joint Tactical Ground Station. Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations. Modernization projects included: Communications & Electronic Scenario Generation Software; Ballistic Missile Command and Control System improvements; Improved Data Reduction System; Encrypted Secure Database Network; Upgrade for Distributed Node Network Switch; Upgrade to Radar Imaging Technology; QF4 Target Drone Control System; Safety Berms; Explosives Building Upgrades.	rea Defense oint Tactical g System LOSAT) /stem c Scenario c ure Database 4 Target Drone
Total 60471			14 (1) (2) (2) (3) (4) (4) (4)
FY 1996 Planned Program: • 51367 Some o PATRI System Institution	Some of the largest system level programs to be tested are: PATRIOT Missile System, Theater High Altitude Area Defense (THA. System (ATCCS), Multiple Launch Rocket System Institutional funds are also to be used to modernize test facilities and ecenvironmental, efficiency, and technological aspects of test operations.	Some of the largest system level programs to be tested are: PATRIOT Missile System, Theater High Altitude Area Defense (THAAD), Theater Missile Defense (TMD), Army Tactical Command & Control System (ATCCS), Multiple Launch Rocket System Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.	& Control fety,
• 399 Total 51766	Revised Economic Assumption not available for execution.		
FY 1997 Planned Program: • 61233 Some o Theater STING STANI Institut enviror	Some of the key systems programmed for testing are: Theater Missile Defense/Theater High Altitude Area Defense; PATRIOT Advanced Configuration; STINGER Product Improvement; BAT Pre-Planned Product Improvements; All Source Analysis Syste STANDARD Missile; Navy Research Rockets; Air Force AMRAAM; Command and Control Vehicle Institutional funds are also to be used to modernize test facilities and equipment to maintain current tesenvironmental, efficiency, and technological aspects of test operations.	Some of the key systems programmed for testing are: Some of the key systems programmed for testing are: Theater Missile Defense/Theater High Altitude Area Defense; PATRIOT Advanced Configuration; STINGER Product Improvement; BAT Pre-Planned Product Improvements; All Source Analysis System (ASAS) Evolutionary Developments; Navy STANDARD Missile; Navy Research Rockets; Air Force AMRAAM; Command and Control Vehicle Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.	pments; Navy ifety,
Total 61233			
Project DE93	Pag	Page 10 of 18 Pages Exhibit R-2 (PE 0605601A)	01A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605601A Army	D TITLE Army Test Ranges and Facilities	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	EX 1996 53203	F <u>Y 1997</u> 54828	,
997) since		+6405	
Current President's Budget Submit Current President's Budget Submit Change Summary Explanation: Funding: FY 95 aligns guidance with workload and prioritized TECOM test facility modernization projects. FY 96 adjustment reflects revised economic asumptions. FY97 aligns funding with workload.	51766 d and prioritized TE0	61233 COM test facility modernization projec	. 52
Project DE93	Page 11 of 18 Pages	Exhit	Exhibit R-2 (PE 0605601A)

RDT&E BUDGET ITEM JUSTI		THICAL			IFICATION SHEET (R-2 Exhibit)		(September 1994)		March 1996	රෙ
DIDGET ACTIVITY	an (volumentarian de la comparta del comparta de la comparta de la comparta del comparta de la comparta del la comparta de la comparta del la comparta de la		PE NU	PE NUMBER AND TITLE	TITLE				Ы	PROJECT
6 - Management Support			090	5601A A	0605601A Army Test Ranges and Facilities	t Ranges	and Fac	ilities		0618
	AND AND ASSESSED OF A SECOND	Contraction of the second seco	A GOLD CONTROL OF CONT			A CONTRACTOR OF THE PROPERTY O				yearen)
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
COST (In Thousands)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		Complete	
D618 Aviation Technical Test Center	13078	14033	12826	9074	8659	9460	9848		Continuing	Continuing Continuing
			A STATE OF THE PERSON NAMED IN COLUMN			Control of the Contro		te division and a second section	The second secon	

systems/subsystems in order to identify problems through testing before these problems are encountered in deployed systems. Provides foreign materiel exploitation testing A. Mission Description and Budget Item Justification: Project D618 Aviation Technical Test Center: Aviation Technical Test Center (ATTC), Fort Rucker, AL with systems/subsystems, and various items of related ground support equipment. Lead-the-Fleet testing is conducted to develop reliability/maintainability data on new aircraft qualification of helicopters for flight under icing conditions. Also funds the Airborne Engineering Evaluation Support Activity (AEESA) at CECOM which includes night (ATTC), Ft. Rucker, Alabama and Edwards AFB, California to YPG was revised by the Secretary of the Army to have the consolidation take place at Fort Rucker, AL but with aerial weapons testing to remain at YPG. This consolidation will take place by 1st Quarter FY 1997 and is accounted for in the FY 1997 estimate. A portion of the for the Army and other services. Operates DoD's only helicopter icing spray capability and low speed, fixed wing cloud physics instrumented aircraft which provide for vision research, aircraft modeling, flight support, modification of airframes and installation of night vision systems. Includes personnel costs to downsize the workforce commensurate with the T&E workload reductions. The Army plan to consolidate the portion of aviation testing currently managed by Aviation Technical Test Center a test directorate at Edwards AFB, CA provides a capability for development, production, verification, and materiel change testing of Army aircraft, Aircrew funding has therefore been realigned from project DE90 to project D618.

FY 1995 Accomplishments:

UH-1H Helicopter, Special Operations Aircraft, Lead-the-Fleet, OH-48D KIOWA Warrior, Rotary Wing Aerial Targets, OH-58A Helicopter, Aircraft APACHE, XM94 Long Range - Biological Standoff Detection System, CH-47D Cargo Helicopter, Air to Ground Engagement System, Brilliant Antifor GRIZZLY HUNTER, UH-60 BLACK HAWK Helicopter, AN/ARC-201 SINCGARS Radio, AH-64 APACHE, COMANCHE, LONGBOW Armor Terminally Guided Munition (BAT), Aircrew Microclimatic Conditioning System, VOLCANO Mine System, XM48/XM49 Chemical 121 tests were conducted. The largest 20 systems level programs were: Biological Protective Mask, Support to US Navy Test Pilot School..

FY 1996 Planned Program:

UH-1H Helicopter, OH-58D KIOWA Warrior, COMANCHE, Lead-the-Fleet, Special Operations Aircraft. Some of the largest system level programs to be tested are: 10016

Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.

Personnel and other one time costs associated with downsizing and consolidation.

Project D618

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (F		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605601A Army	PENUMBER AND TITLE O605601A Army Test Ranges and Facilities	PROJECT IIties D618
FY 1996 Planned Program: (continued) S53 AEESA 160 SBIR/STTR Total 14033 FV 1007 Planned Program:	ion.		,
of the key systems programmed for NCHE Subsystems; Aircraft Survional funds are also to be used to imental, efficiency, and technology	r testing are: ivability Equipment; 2nd Generation modernize test facilities and equipme ical aspects of test operations	FLIR; CH-47D Product Improvement nt to maintain current test capabilities a	; Aircraft Avionics nd improve the safety,
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustment to FY 1996 Adjustment to Budget Year (FY 1997) since	EY 1996 14424 14172 -139	EY 1997 0 +12826	
FY 1996 President's Budget Current President's Budget Submit	3 14033	12826	
Change Summary Explanation: Funding: FY 95 aligns guidance with workload. FY 1997 funding re	establishes guidance to	997 funding reestablishes guidance to reflect Secretary of Army decision to maintain aviation testing	maintain aviation testing

capability at ATTC, Ft. Rucker, AL.

Project D618

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RDT&E BUDGET ITEM JUST		TFICAL	S S S S S S S S S S	IFICATION SHEET (R-2 Exhibit)	-2 Exhi			DATE	March 1996	රෙ
BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	ITLE	e sont van en dastrik en parkennen som til van de en som en s			Ы	PROJECT
6 - Management Support			9	0605601A Army Test Ranges and Facilities	rmy Test	Ranges	and Fac			D630
COST (In Thousands) FY 1995 F	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D630 TECOM Test Design and Evaluation	3892	4623	4785	4937	5094	5249	5409		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification Project D630 TECOM Test Design and Evaluation: This project provides for independent assessment of over 300 non-major systems. It encompasses design of developmental and initial production assessment plans, test design, and subsequent independent analysis and assessment independent assessment plans and reports annually in the areas of munitions, weapons, electronics, communications, electronic warfare training devices, automotive and engineering equipment, bridging, clothing and individual equipment and chemical detection alarms and protections equipment. Beginning in FY 1996, funding reflects reports in support of all acquisition milestones to include recommendations for type classification and materiel release of non-major systems. Includes some 125-150 ealignment of Test Management and Safety Verification as a part of TECOM's Reshape Program.

FY 1995 Accomplishments:

- Continue test design and assessment program, addressing new developments, production, material changes. Program items included: **IEW Common Sensor**
 - Radar Jammer System
- Fire Support Combined Arms Tactical Trainer
- Enhanced TRACKWOLF
- Improved Ribbon Bridge/FFB 7000
 - Advanced Wind and Dust Goggles
- Long Range Stand-Off Biological Detector
 - Driver's Vision Enhancer
- Lightweight Video Reconnaissance System Vehicle Intercom System
- Suite of Integrated IR Countermeasures
- Bunker Defeat Munition

Extended Cold Weather Clothing System, 2nd Generation

XM81 Millimeter Wave Screening Grenade

High Mobility Trailer

Advanced Aerial RADIAC System

Personnel Locator System

3892

Total

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RDT&	RDT&E BUDGET ITEM JUSTIFICATION SI	TIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	PROJECT CILITIES D630
FY 1996 Planned Program:	Continue test design and assessment program, addressing new developments, production, and material changes. Programmed items include: - Army Key Management System - Combat Service Support Training System - Electro-Optic Helmet Sight System - Remote Activation Munitions System - Advanced Battle Dress Overgarment (JSLIST) - Land Warrior - Improved Chemical Glove - Self-Contained Toxic Environmental Protection (TAP) Suit Biological Point Detector - Individual Soldier Enhanced Ration - Advanced Combat Vehicle Crewman Helmet - Advanced Combat Vehicle Crewman Helmet - Advanced Combat Vehicle Crewman Helmet	elopments, production, and material changes. Programmed ite AN/MLQ-34 TACJAM-A Close Combat Decoy Cueing - Multispectral Driver's Vision Enhancement Night Image Thermal Equipment Modular Decontamination System Heavy Assault Bridge System Vapor Protective Flame Resistant Undergarment (JSLIST) C-17 Transport, Army Interface uit Biological Point Detector Automatic Chemical Agent Alarm	ogrammed items include: ent (JSLIST)
• 53 SBIR/STTR • 34 Revised Eco Total 4623	SBIR/STTR Revised Economic Assumption not available for execution.		
FY 1997 Planned Program: 4785 Continu - - - - - - - - -	Continue test design and assessment program, addressing new developments, production, and material changes. Programmed items include: - Aviation Combined Arms Tactical Trainer - Intelligence Electronic Warfare Tactical Proficiency Trainer - Tactical Standoff Biological Detector - Deployable Universal Combat Earthmover - Air Warrior - Air Warrior	elopments, production, and material changes. Programmed items includ Integrated System Command & Control Mobile Automated Instrumentation Suite Joint Service Lightweight Integrated Suit Technology (JSLIST) Containerized Kitchen THAAD Ground Based Radar 1.1 MW Generator	ogrammed items include: te it Technology (JSLIST)
Total 4785			
Project D630	Page 15 of 18 Pages		Exhibit R-2 (PE 0605601A)

1131

S	SATION) Laahs	FICATION SHEET (R-2 Exhibit)	DATE Mar	March 1996
BUDGET ACTIVITY 6 - Management Support	4	PE NUMBER AND TITLE 0605601A Arm)	ENUMBER AND TITLE D605601A Army Test Ranges and Facilities	lities	PROJECT D630
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	EY 1995 3254 3247 +645	<u>FY 1996</u> 4753 4669 -46	FY 1997 4926 -141		
FY 1996 President's Budget Current President's Budget Submit	3892	4623	4785		

Change Summary Explanation:
Funding: FY 95 increase was provided to develop Test Capability Master Plans and establish infrastructure investment program needs as part of the DoD Funding: FY 95 increase was provided to develop Test and Evaluation Reliance and Investment Board, and to provide for VERA/VSIP costs.

Exhibit R-2 (PE 0605601A)

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Project D630





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605601A Army	TITLE Irmy Test	t Ranges	PE NUMBER AND TITLE O605601A Army Test Ranges and Facilities	ilities		PROJECT D632
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D632 Redstone Technical Test Center	2053	1060	1578	1178	1591	1260	1303		Continuing	Continuing Continuing

energy/precision guidance lasers. RTTC conducts system level tests on small rockets and missiles and component/subsystem tests for all categories of Army rockets, guided A. Mission Description and Budget Item Justification: Project D632 Redstone Technical Test Center: Redstone Technical Test Center (RTTC), Redstone Arsenal, AL provides technical test expertise, facilities and capabilities for conduct of research, development, production and post-production testing of missiles, rockets, and low testing and evaluating missile stockpile reliability at storage sites around the world. Through stockpile reliability testing, missile shelf life extension has resulted in cost component/subsystem test facilities, b) ranges for flight testing small missiles and evaluating warhead effects, c) rocket motor static test stands, and d) laboratories for climatic, vibration, shock, and electromagnetic environmental effects testing. RTTC is the Product Assurance tester for the Army's Missile Command for repair parts missiles, and associated equipment. RTTC is the Army lightning tester for hazardous/explosive materials. Major capabilities include a) extensive laboratory avoidance greater than \$7.9 billion.

FY 1995 Accomplishments:

166 tests were conducted. The largest 15 systems level programs were:

Warhead Technology, MLRS Extended Range Rocket, Follow-on Production of the TOW/BRADLEY system; Development Test of the Line-of-Sight interoperability Test Facility, JAVELIN, Unmanned Aerial Vehicle Sensor Systems, USAF MAVERICK Missile, TOW Basic Missile, LONGBOW, STINGER Missile, Brilliant Anti-Armor Terminally Guided Munition (BAT), TOW BRADLEY Improved Acquisition System, DRAGON Missile, TOW Improved Target Acquisition System, Advanced Guided Missile System, Missile Repair Parts, Multiple Launch Rocket System (MLRS) Anti-Tank Missile

environmental, efficiency, and technological aspects of test operations. Modernization projects accomplished include: Virtual Range Development; Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, MLRS Family of Munitions Test Suite; Weapons System Hardware Integration with Distributed Inactive Scenarios.

FY 1996 Planned Program:

Some of the largest system level programs to be tested are:

JAVELIN, Missile Repair Parts, TOW Improved Target Acquisition System, Air to Ground Missile System, Multiple Launch Rocket System (MLRS) Interoperability Test Facility.

Revised Economic Assumption not available for execution.

1060

Total

Project D632

1133

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	A TION SHEET	(R-2 Exhibit) DATE March 1996	
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605601A Army	PROJECT Army Test Ranges and Facilities D632	
 FY 1997 Planned Program: 1578 Some of the key systems programmed for testing are: Unmanned Ground Vehicle; Brilliant Anti-Armor Submunition (BAT); MLRS Family of Munitions; PATRIOT Advanced C Tactical Missile System Block Improvements; JAVELIN; TOW missile and target acquisition systems; Missile Repair Parts. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improvemental, efficiency, and technological aspects of test operations. 	e: ubmunition (BAT); MLR ELIN; TOW missile and test facilities and equipm s of test operations.	Some of the key systems programmed for testing are: Some of the key systems programmed for testing are: Unmanned Ground Vehicle; Brilliant Anti-Armor Submunition (BAT); MLRS Family of Munitions; PATRIOT Advanced Configurations; Army Tactical Missile System Block Improvements; JAVELIN; TOW missile and target acquisition systems; Missile Repair Parts. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	(1995 FY 1996 1049 1090 1027 +1026 1071 -11	FY 1997 1122 +456	
	2053 1060	1578	
Project D632	Page 18 of 18 Pages	es Exhibit R-2 (PE 0605601A)	
	1134		
	UNCL IFIED		



					-
9(Total Cost	Continuing	3772	
March 1996	ng L	Cost to Complete	0 Continuing Continuing	0	
DATE IN	Sustaini		0	0	
	logy and	FY 2001 Estimate	26960	0	
bit)	E NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	FY 2000 Estimate	25861	0	
R-2 Exhi	ттге Army Tes ttion	FY 1999 Estimate	24624	0	
HEET (F	PE NUMBER AND TITLE 0605602A Army Instrumentation	FY 1998 Estimate	13621	0	
TION SI	PE NI 060 Ins	FY 1997 Estimate	22413	0	
STIFICA		FY 1996 Estimate	26846	0	
EM JUS		FY 1995 Actual	30558	3772	
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	вирбет Астіуітү 6 - Management Support	COST (In Thousands)	Total Program Element (PE) Cost	D453 Technical Test Instrumentation	

0 Continuing Continuing

26960

25861

24624

23621

22413

26846

26786

D628 Test Technology & Sustaining Instrumentation

(DoD) efforts; test methodology improvements, standardization, and international test procedures and methods; and development of prototype instrumentation not available generally reached or exceeded it's economic life; and efforts to identify advanced test technology long-range requirements and their integration into Department of Defense destructive test-fix-test cycles; sustainment of the MRTFB instrumentation assets through upgrade and replacement of obsolete test instrumentation and equipment that has on-the-shelf. FY 1997 funds the minimum level required to assure adequate test data for acquisition milestone decisions and reduce maintenance costs required to forestall Mission Description and Budget Item Justification: Funds development, acquisition and sustainment of technical test instrumentation for the Army at the Major Range Proving Ground (DPG), UT; and, White Sands Missile Range (WSMR), NM; Redstone Technical Test Center (RTTC), AL; and Aviation Technical Test Center (ATTC), and Test Facility Bases (MRTFB) which include: Yuma Proving Ground (YPG), AZ; Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG), MD; Dugway equipment failures, testing delays and provide adequate technology consistent with downsizing. Includes research and development effort directed toward support of downsizing. Included are development of virtual testing capabilities providing innovative testing alternatives supporting early weapons design and reducing physical AL. Funds support testing of advanced, high technology systems and weapons developments to improve effectiveness, efficiency and offset expected personnel installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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RDT&E FIDGET ITEM JUST			FICATION SHEET (R-2 Exhibit)		EXPI S				March 1996	ဖ
BUDGET ACTIVITY 6 - Management Support			PE NU 060 ms(PE NUMBER AND TITLE 0605602A Army Instrumentation	ritte irmy Test tion	t Techno	logy and	PENUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation		PROJECT D453
COST (In Thousands) Actual E	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D453 Technical Test Instrumentation	3772	0	0	0	0	0	0	0		3772

perform developmental testing of weapon systems at US Army Test and Evaluation Command (TECOM) activities (four of which are elements of the DoD MRTFB). Major produces a new developmental testing capability or requires intensive management during acquisition. Resources are realigned effective FY 1996 to PE 0604759A, Project A. Mission Description and Justification: Project D453 - Technical Test Instrumentation: This investment account develops and acquires major test technology to instrumentation is defined as that instrumentation with one or more of the following attributes: satisfies Army requirements, used by multiple commands, high risk, D984 - Major Test and Evaluation Investments.

FY 1995 Accomplishments:

•	2880	_
•	500	Crusader. 500 Supported the system level Army Tactical Command and Control Systems (ATCCS) technical test at WSMR C41 Directorate. Initiated support for
•	218	Warrior Focus Army Warfighter Experiment (AWE). 218 Continued execution of the Army's portion of the Global Positioning System (GPS) full-rate production contract at the GPS Range Application Joint Project Office (RAJPO) Eglin AFB, acquiring and fielding hardware and software at all Army test organizations. GPS will provide common Project Office (RAJPO) Eglin AFB, acquiring and fielding hardware and software at all Army test organizations.
4	174	

FY 1996 Planned Program: All resources realigned to project D984, PE 0604759A.

3772

Total

FY 1997 Planned Program: All resources realigned to project D984, PE 0604759A.

Project D453

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RDT&E BUDGET ITEM JUSTII	FICATIO	N SHEET (IIFICATION SHEET (R-2 Exhibit)	DATE March 1996	9
вирдет Астіміту 6 - Management Support		PE NUMBER AND TITLE 0605602A Army Instrumentation	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation		РRОЈЕСТ D453
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	F <u>Y 1995</u> 3784 3772	FY 1996 0	FY 1997 0	,	
Appropriated Amount (F. 1.976) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	3772	0	0		
Project D453	Pa	Page 3 of 9 Pages	Exhib	Exhibit R-2 (PE 0605602A)	
		1137			

RDT&E BUDGET ITEM JUST		FICA	\$\frac{7}{2}\$		IFICATION SHEET (R-2 Exhibit)			DATE	March 1996	6
BUDGET ACTIVITY 6 - Management Support		and book grammer was the contract of the contract and the	PENI 960	PENUMBERAND TITLE 0605602A Army Instrumentation	TITLE Vrmy Tes tion	t Techno	logy and	ENUMBER AND TITLE 3605602A Army Test Technology and Sustaining Instrumentation		PROJECT D628
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Current State Barrens Control	Cost to Complete	Total Cost
D628 Test Technology & Sustaining Instrumentation 26786	26786	26846	22413	23621	24624	25861	26960	0	Continuing Continuing	Continuing

models and virtual test capabilities. Sustaining instrumentation maintains existing technical testing capabilities at Army test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, to assure adequate test data for acquisition milestone decisions for projects such as Patriot Advanced Capability Phase 3 (PAC 3), M1A2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Crusader, the Theater High A. Mission Description and Justification: Project D628 - Test Technology & Sustaining Instrumentation: Test technology provides critical front-end efforts for instrumentation prototypes. Within this element, a major initiative is directed towards efficiency and covers downsizing offsets, systems integrated test simulators and development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced Altitude Area Defense (THAAD), Comanche and Javelin.

FY 1995 Accomplishments:

- replacement of Bubbler Samplers at DPG with Solid Sorbant II Analyzer to decrease sampling time by a factor of 10, Technical Committee support Maintained existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation such as the and Methodology studies at Army technical test ranges.
 - Initiated a 2-year effort to procure and integrate instrumentation to allow testing of P/Y code of the Army Global Positioning System (GPS) at
 - Completed the acquisition of communications boards for high-speed digital signal processing at WSMR. WSMR. 200 400
- Initiated the development and acquisition of the Standoff and Tactical Jammer capability to control jamming instrumentation for C41 testing at WSMR.
 - Integrated EPLRS Test Control Center into the Army Tactical Command and Control System (ATCCS) at WSMR. Refurbished nine Climatic Facility Chambers and brought them into EPA compliance at YPG. 650 270
- Acquired 1 reference and 6 participant receivers to enhance GPS accuracy of real-time data and processing capabilities at YPG. 470
- Initiate a 3-year program to acquire Flight Test Cockpit Indicators for use with Common Airborne Instrumentation System (CAIS) modules used to support all Army aircraft testing and other airborne test equipment at ATTC.
- Replaced obsolete medium speed aircraft instrumentation recorders at ATTC with new recorders to handle pulse code modulated data in excess of 3 megabytes per second. 370
 - Acquired Telemetry Front-End Data Processing Equipment at ATTC. This equipment is required to reduce data recorded and/or telemetered from on-180

Project D628

Page 4 of 9 Pages





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I SHEET (R-2 Exhibit)	March 1996
вирбет АСТІИІТУ 6 - Management Support		PENUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT
FY 1995 Accompli 300	S	Acquired Comtinued) Acquired Common Airborne Instrumentation System (CAIS) at ATTC which replaced old, obsolete aircraft instrumentation and provid capability to collect data directly from the aircraft systems. CAIS was congressionally directed to avoid duplicate non-standard aircraft	n and provides the dard aircraft
• 450		Acquired instrumentation capable of detecting and measuring the specific radioactive isotopes to ensure personnel safety and compliance with EPA Regulation 520/1-89-001 through 003 at the WSMR Fast Burst Reactor. Also, continue the replacement of obsolete equipment used in detecting, measuring and analysis of radioactive contamination.	nd compliance with EPA nent used in detecting,
• 1761	The 3d year of an 8-year effort to moder	The 3d year of an 8-year effort to modernize and mobilize the backbone radar (AN/FPS-16) tracking capability at WSMR.	r
950		the aumosphere for testing optics and electromagnetic interference testing at N. 1.C., digitize and transfer missile test data throughout the test ranges at RTTC.	
• 800		Implemented the 2d year buy of Subsystem Test and Simulation Facility at RTTC which provides high fidelity integrated systems test simulation to	ystems test simulation to
936	Replaced chemical/biological laboratory	analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission at DPG.	nse mission at DPG.
9/2	Developed and acquired rugged combat hardened ballistic shock sensors and ami	hardened and acquired rugged combat venicle survivability instrumentation such as not opinious, transfer temperature measurement devices, that the shock sensors and ammunition compartment vulnerability for Composite Armored Vehicle, Bradley, MIA2 upgrades, Automotive	A2 upgrades, Automotive
• 1400		or (CA1-D) workload from 1993-2000 at A1C. reteorological support for Army RDT&E.	
372		Improved capabilities to measure dust, atmospheric transmissivity and laser scoring to improve the performance of the tracking system while reducing the maintenance and operating costs at YPG.	sking system while
• 730		Developed test methodology and requirements/specifications for instrumentation to test combat vehicles with advanced embedded computing/electronics systems (Vehicle Electronics [VETRONICS] such as the MIA2 and other armored systems such as the Automatic Target	bedded the Automatic Target
• 1177		Recognition (ATR), Crusader and Component Advanced Technology Demonstrator at ATC. Implemented high-speed, multi-media data handling equipment at ATC (interfacing to the Fiber Optic Network), rugged high-speed video imaging,	igh-speed video imaging,
• 430		automating test management and data flow processes to accommodate pending reductions in the workers. Developed and acquired software/hardware in support of the TECOM Virtual Proving Ground, developed validated data bases to support vehicle	ases to support vehicle
• 515	Developed software for control of the Q		Q
• 175	Developed software of research technique tested at WSMR.	les to improve the accuracy of radar data to provide miss distance data on nign-attitude missiles and an claid	tude missiles and allerait
398	Continued to develop 30 test operations of test results throughout Army and for	procedures (TOPs) and 25 international test operations procedures (ITOPs) to ensure quality and consistency international cooperative applications.	ire quality and consistency
Project D628	Pag	Page 5 of 9 Pages Exhibit R-2	Exhibit R-2 (PE 0605602A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT Sustaining D628
FY 1995 Accomplis	himents: (continued) Provided management and support costs to i contracts, patents, exhibits and printing. Acquired a cable retrieval winch for use at tl Developed and fielded a system to use satell timing distribution system currently used at Continued to modify the WSMR Command Procured a 24km communications link betw Replaced the pumps for RTTC electro-hydra Replaced two worn-out instrumentation van Initiated development and integration of TE Developed the following Virtual Proving G ATC: Procured a high-performance com DPG: Developed a computational fluid RTTC: Purchased a vehicle/platform mot system. HQ: Developed the capability to interfi developed recommended Army pi WSMR: Developed a VPG capability to eleveloped a VPG capabil	nclude salaries and benefits for Directorate of Corporate Information and Technology personnel, support ite timing distributed by the GPS as a lower-cost replacement for the extensive and expensive range WSMR. WSMR. Destruct system for remote control capability IAW personnel downsizing and safety assurance initiatives. Bestruct system for remote control capability IAW personnel downsizing and safety assurance initiatives. een buildings B2105 and B3659 at YPG. een buildings B2105 and base in testing chemical protective clothing. een base used to validate radiation dose scaling for simulating a nuclear environment. Procured a sto interface with other defense models, simulations, computers and databases. een building B2105 beta base base base base base base base bas	ensive and expensive range and safety assurance initiatives. felectro-optical fire control subons system models to VPG, /PG master plan. stems in 1y equipment in the Range ivironment. Procured a ibases.
Project DA28		Page 6 of 9 Pages	Exhibit R-2 (PE 0605602A)
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)
вироет астіліту 6 - Management Support	PENUMBER AND TITLE 0605602A Army Test Technology and Sustaining D628 Instrumentation
FY 1996 Planned Program: IS70 Provide instrum unservi ATTC) withou (TOPs) cooper. an estir an estir ATC:	Provide quick reaction capability to respond to failed instrumentation replacement needs, provide support for technical committees forging future instrumentation technology developments and maintain and improve existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges (such as bulky, obsolete airborne data recorders used for helicopter testing at ATTC). Develop prototype instrumentation (such as the development of the Bridge Crossing Simulator at ATC which will be used to test for failures without risk to testers) and perform advanced concept studies for development of new technologies. Continue to develop test operations procedures (ITOP) to ensure quality and consistency of test results throughout Army and for international cooperative applications, develop prototype instrumentation and perform advanced concept studies for development of new technologies (ITOPS save an estimated \$800K annually through test cost reduction). Continue support of TECOM VPG: ATC: Develop data bases and detailed models and systems interfaces.
• 792 • 2902	 DPG: Develop software simulation of chemical biological/aerosol testing. RTTC: Acquire the capability to support virtual component/subsystem tests for IR Sensors with open loop and closed loop non-destructive testing of imaging IR Seekers, night sights and all-up-sound missiles. Development of the virtual range (launch conditions engagement scenarios, target dynamics, real-time flight or vehicle dynamics and operational environments. HQ: Continue VPG design and integration. Develop and acquire 10 more Flight Test Cockpit Indicators and acquire ADPE hardware and software needed at ATTC to support aircraft testing. Continue to acquire high-speed, multi-media data handling equipment, develop test methodology and requirements/specifications for instrumentation used for combat vehicle testing, such as the MIA2, Crusader and Component Advanced Technology Demonstrator (CAT-D) at ATC. These
• 1073	processes are needed to accommodate pending reductions in the workforce. Continue to replace chemical/biological laboratory analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission at DPG. Complete the acquisition of the capability to test advanced Command, Control, Communication and Intelligence Systems of future weapon systems at WSMR C41 Directorate. Continue to acquire instrumentation to ensure personnel safety and compliance with EPA Regulations, sustain optical and and obsolete Telemetry Tracking and Acquisition Systems (TTAS) with new state-of-the art systems
• 1780	which will provide increased data rate and reduce the number of personnel required to operate the instrumentation at WSMR. Complete acquisition of Subsystem Test and Simulation Facility which provides high fidelity models and simulation to test small missile weapon systems. Develop a vibro-acoustic flight simulation to produce dynamically accurate missile flights necessary to reduce the number of costly missile test fights. Complete the fabrication of the Thermal Ablative Test Stand used to characterize materials in advanced missile systems at RTTC.
Project D628	Page 7 of 9 Pages Exhibit R-2 (PE 0605602A)

	ROT&E BUDGET ITEM JUSTIFICATION SI	FICATION SHEET (R-2 Exhibit) DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PROJECT OCOS AND TITLE OCOPIOS AND SUSTAINING D628 Instrumentation
FY 1996 Planned P 902	FY 1996 Planned Program: (continued) 902 Acquire Tank Accuracy Real Time Processing instrumentation, co at YPG. Procure a Millimeter Wavelength Transmissometer, Tele	rogram: (continued) Acquire Tank Accuracy Real Time Processing instrumentation, continue the refurbishment of Climatic Chambers to bring them into EPA compliance at YPG. Procure a Millimeter Wavelength Transmissometer, Telephoto Lenses and other cold weather instrumentation at YPG Cold Regions Test at YPG. Procure a Millimeter Wavelength Transmissometer, Telephoto Lenses and other cold weather instrumentation at YPG Cold Regions Test
	Activity. Provides management and support costs to include salaries and benefits for Directorate of Corporate Information and Tecl contracts, patents, exhibits and printing. Continue funding support to Joint Projects Office (JPO) for Test and Evaluation. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Revised Economic Assumption not available for execution	Activity. Provides management and support costs to include salaries and benefits for Directorate of Corporate Information and Technology personnel, support contracts, patents, exhibits and printing. Continue funding support to Joint Projects Office (JPO) for Test and Evaluation. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Revised Economic Assumption not available for execution
FY 1997 Planned Program: 1372 Provide instrume unservic developi	rogram: Provide quick reaction capability to respond to failed instrumentati instrumentation technology developments and maintain and improunserviceable equipment/instrumentation at Army technical test radevelopment of new technologies. Continue to develop Test Oper ensure quality and consistency of test results throughout Army and	rogram: Provide quick reaction capability to respond to failed instrumentation replacement needs, provide support for technical committees forging future instrumentation technology developments and maintain and improve existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges. Develop prototype instrumentation and perform advanced concept studies for development of new technologies. Continue to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (TOPs) to development of new technologies. Continue to develop Test Operations Procedures (TOPs) and International Test Operations \$800K annually ensure quality and consistency of test results throughout Army and for international cooperative applications (ITOPS save an estimated \$800K annually
• 7293 • 448	through test cost reduction). Continue test center support of TECOM Virtual Proving Ground. Continue replacement of Flight Test Cockpit Indicators and acquired Special One sirrage at ATTC.	ual Proving Ground. Indicators and acquire Telemetry Front-End Data Processing Equipment for programs such as Comanche
• 1250	continue to acquire rugged high-speed video imaging and processing equipment. Continue to acquire rugged high-speed video imaging and processing equipment and rugged combat vehicle survivability instrumentation such as fiber ballistic shock sensors and ammunition compartment vulnerability sensors for Co ballistic shock sensors and ammunition compartment vulnerability sensors for Co	and special Ops and at a factories of the stimulating and processing equipment. Continue to develop and acquire nuclear gamma pulse stimulating Continue to acquire rugged high-speed video imaging and processing equipment and rugged combat vehicle survivability instrumentation such as fiber optic sensors, transient temperature measurement devices, hardened equipment and rugged combat vehicle survivability sensors for Composite Armored Vehicle, Bradley, M1A2 upgrades, Automotive ballistic shock sensors and ammunition compartment vulnerability sensors for Composite Armored Vehicle, Bradley, M1A2 upgrades, Automotive
1000	Test Rig and Component Advanced Technology Definition of Purchase 2 gas chromatography workstations to control and collect the Nuclear Biological Chemical (NBC) Defense mission at DPG.	Test Rig and Component Auvanceu i commongs Demonstration (2012). Purchase 2 gas chromatography workstations to control and collect NBC data from 6 gas chromatographs. Third phase of a 5-phase project to sustain purchase 2 gas chromatography workstations to control and collect NBC data from 6 gas chromatographs. Third phase of a 5-phase project to sustain the Nuclear Biological Chemical (NBC) Defense mission at DPG.
3135		Complete the design and acquisition of software and hardware to support the Standoff and Tactical Jammer capability for C41 testing at wards. Complete the design and acquisition of software and system, complete acquisition of environmental monitors for nuclear effects testing, complete the Complete integration of QF-4 drone formation control system, complete acquisition of environmental monitors for finding such as GPS timing clock, upgrade to data analysis equipment and system-under-test equipment. Acquire and sustain range timing instrumentation such as GPS timing clock, IRIG time generator, and timing amplifiers at WSMR to meet the trajectory and velocity timing requirements for programs such as Patriot and THAAD.
	Page 8	Page 8 of 9 Pages
Project D028		1142

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET (I		DATE March 1996	
вир бет Асті VITY 6 - Management Support	PE NUMBER AND TITLE 0605602A Army Instrumentation	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation		РРОЈЕСТ D628
 FY 1997 Planned Program: (continued) Upgrade the Kineto Tracking Mounts at YPG by procuring 2 KTM trailers to improve system reliability. Continue to refurbish YPG Climatic Chambers to meet test requirements and upgrade of facilities to be in compliance with EPA regulations. Continue to upgrade YPG data acquisition, processing and display capabilities for air-to-ground and ground-to-ground armaments testing. Continue procurement of a Visual Wavelength Transmissometer and Low Light Level Cameras at YPG Cold Regions Test Activity. Fransmissometer and Low Light Level Cameras at YPG Cold Regions Test Activity. Provides management and support costs to include salaries and benefits for Directorate of Corporate Information and Technology personnel, support contracts, patents, exhibits and printing. Continue funding support to the Joint Projects Office (JPO) for Test and Evaluation. 	curing 2 KTM trailers to i facilities to be in complian and ground-to-ground arm /PG Cold Regions Test Ac alaries and benefits for Dianding support to the Joint	PG by procuring 2 KTM trailers to improve system reliability. Continue to refurbiting and ground-to-ground armaments testing. Continue to upgrad are sound and ground-to-ground armaments testing. Continue procurement of a Viameras at YPG Cold Regions Test Activity. o include salaries and benefits for Directorate of Corporate Information and Techno Continue funding support to the Joint Projects Office (JPO) for Test and Evaluation.	Continue to refurbish YPG Climatic Continue to upgrade YPG data acquisition, procurement of a Visual Wavelength mation and Technology personnel, support lest and Evaluation.	isition, I
nary et (FY 1996) 1995)	EY 1995 FY 1996 27761 27600 27232	FY 1997 23980		
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since	-440 27117 -271	-1567		
FY 1996 President's Budget Current President's Budget Submit	26786 26846	22413		
Project D628	Page 9 of 9 Pages	Exhit	Exhibit R-2 (PE 0605602A)	

A HAVE THE RESTREET	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		HEGH	SOL		-2 Exhi	oit)		DATE	March 1996	10
BUDGE 6 - N	BUDGET ACTIVITY 6 - Management Support	Hale de la composition della c		PE NU 060	PE NUMBER AND TITLI 0605604A SUIT	rite urvivabil	भागाः Survivability/Lethality Analysis	lity Anal	ysis		
	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
	Total Program Element (PE) Cost	37065	33595	31343	32266	33734	33059	35527		Continuing	Continuing
DC10	Aviation System Survivability/Lethality/	4631	0	0	0	0	0	0		0	0
D089	Aircraft Certification	2922	0	0	0	0	0	0		0	0
D181	Antiradiation Missile Counter - Countermeasures	1037	0	0	0	0	0	0		0	0
D190	Integrated Analysis	6765	0	0	0	0	0	0		0	0
D234	Close Combat/Fire Support Survivability Analysis	6850	0	0	0	0	0	0		0	0
D235	Missile Counter - Countermeasure Technology	629	0	0	0	0	0	0		0	0
D267	Air Defense/Missile Defense System Vulnerability	7910	0	0	0	0	0	0		0	0
D626	S C4I Survivability	6291	0	0	0	0	0	0		0	0
D670) Emerging Technology Systems	0	5418	4879	5278	5243	5022	5590		Continuing	Continuing
D671	l Air Defense/Missile Defense Systems	0	6329	5818	6224	6570	6452	6850		Continuing	Continuing
D672	2 Aviation Systems	0	4346	3739	3673	3777	3821	3873		Continuing	Continuing
D675	5 C4I/IEW Systems	0	4999	5027	4947	4827	4688	5150		Continuing	Continuing
D677	7 Ground Combat Systems	0	5846	5337	5732	6349	6229	9029		Continuing	Continuing
D678	8 Munitions Systems	0	5819	5729	5614	6193	6062	6563		Continuing	Continuing
D679	9 Soldier Systems	0	808	814	198	775	785	795	2	Continuing	Continuing
				Page 1 of	Page 1 of 27 Pages			Exhi	Exhibit R-2 (PE 0605604A)	0605604A)	
				111/	7.						





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE March 1996

6 - Management Support

BUDGET ACTIVITY

PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis

and biological battlefield threats and meteorological conditions on Army individual soldiers and systems. The work is accomplished through threat research, theoretical and environment effects (E3), information warfare (IW), decoys, conventional ballistics and nuclear/biological/chemical (NBC) effects on Army soldiers and systems. The PE equipment and facilities, general management, administrative and contractor support required for program execution. This effort is conducted by the U.S. Army Research Laboratory (ARL) Survivability/Lethality Analysis Directorate (SLAD). This PE supports Headquarters, Department of the Army (HQDA), Program Executive Offices integration Working Groups (TIWG) and program reviews, review acquisition documentation, provide government testers with technical support, and support milestone lethality analyses (SLA) for all major and designated non-major Army systems. The analyses quantify the effects of electronic warfare (EW), ballistic, nuclear, chemical, engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations. Activities in progress include assessment of the Mission Description and Budget Item Justification: This Program Element (PE) funds activities and functions to conduct objective and integrated survivability and effects of smokes and obscurants, passive countermeasures, tactics, lasers, high-power microwave, electro-optical/radio frequency (EO/RF) jammers, electromagnetic (PEOs), Program Managers (PMs), and independent evaluators with EW, chemical, biological, nuclear, and ballistic expertise to conduct special studies, support Test work efforts provide U.S. Army decision makers, materiel and combat developers, system users, and independent evaluators critical soldier and system survivability analyses that quantify the soldier/system's survivability effectiveness in battlefield threat environments. Recommendations are provided to the materiel and combat developers on how to mitigate soldier/system deficiencies and enhance their survivability. This PE funds civilian salaries, travel, development and maintenance of decision reviews; and is appropriately funded in Budget Activity 6.

NOTE: This PE is restructured effective FY 1996 to provide management visibility for survivability/lethality projects and retain funds in a single PE.

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RDT&E BUDGET ITEM JUST					FICATION SHEET (R-2 Exhibit)			DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PENUMBER AND TITLE 0605604A Surv	E NUMBER AND TITLE 3605604A Survivability/Lethality Analysis	lity/Leth:	ality Anal	ysis		PROJECT DC10
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC10 Aviation System Survivability/Lethality/	4631	0	0	0	0	0	0		0	0

of Army aviation systems to the full spectrum of battlefield threats to include conventional ballistic, electronic warfare (EW), directed energy, and chemical, biological, and A. Mission Description and Budget Item Justification: Project DC10 - Aviation Systems Survivability/Lethality/Vulnerability (SLV): Project investigates the SLV acquisition documentation, test and evaluation master plans, and cost/operational effectiveness analyses. Through FY 1995, provides assessment of acoustic technology nuclear. Aircraft SLV deficiencies are identified and hardening fixes identified as appropriate. SLV analysis directly supports major decision milestone reviews, which might be developed to exploit potential susceptibilities of helicopters. Beginning in FY 96, work performed in this project is restructured to Project D672.

FY 1995 Accomplishments:

100		4631	Total
m., distribution in the	3 Assessed acoustic technology for use as low cost long range battlefield sensors for exploiting vulnerabilities of helicopters.	1203	•
the instance	60K and MH-47E) helicopters.		
MING THOUSE	416 Supported development and execution of live fire test and evaluation for Army aviation systems including Comanche and Special Operations (MH-	416	•
margizan)	battlefield threats.		
etypia parent	5 Expanded the survivability/lethality integrated analysis program to address improvements/modifications to all Army aviation systems across all	626	9
age great	and provided EW support for SLV of Army aviation systems such as Comanche, Apache Longbow, Chinook helicopters, and UAV.		
House town	2386 Through laboratory simulations, computer modeling, and field experiments, conducted, EWVA and ballistic vulnerability investigations and analysis,	2386	•

FY 1996 Planned Program: Project restructured to Project D672 within this PE.

FY 1997 Planned Program: Project restructured to Project D672 within this PE.

Project DC10

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A Surv	D TITLE Survivability/Lethality Analysis	PROJECT ysis DC10
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)	FY 1996 0	F <u>Y 1997</u> 0	,
Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	0	0	
Project DC10	Page 4 of 27 Pages	Exhibi	Exhibit R-2 (PE 0605604A)

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AND INCETACE ACTIVITY		And the second s	PEN	PE NUMBER AND TITLE	ITLE	ASSESSED OF THE WAS A SECTION OF THE			G.	PROJECT
6 - Management Support			090	5604A S	urvivabil	lity/Leth:	0605604A Survivability/Lethality Analysis	ysis		6800
		A CONTRACTOR OF THE CONTRACTOR	Contraction and Contraction of the Contraction of t	COLUMN TOTAL COLUM		Company of the Compan				
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
COST (In Thousands) A	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		Complete	e van de la company
	1									
DOB9 Aircraft Certification	2922	0	0	0	0	0	0		0	0
							Control of the Contro	CONTRACTOR CONTRACTOR CONTRACTOR		THE RESERVE AND THE PROPERTY OF THE PERSON NAMED IN COLUMN

airworthiness of assigned Army aircraft. Performs safety-of-flight investigations/assessments and issues messages to the field. Manages/executes the Army's Aeronautical Manages airworthiness approval of new vendor qualification/testing on field aircraft and material changes, for all assigned Army aircraft systems. Provides airworthiness A. Mission Description and Budget Item Justification: Project D089 - Aircraft Certification: Project performs all engineering functions essential for certifying the development/modification and any future systems/subsystems. Manages the test and evaluation process to support the airworthiness qualification of development and Design Standards (ADS) Program. The ADS is a continuous evolving process incorporating revisions for each change to the standard design of an aircraft system. engineering support to the Aviation Program Executive Office and Aviation and Troop Command Program/Project/Product Manager requirements for major fielded aircraft systems. (This project transfers to PE 0605606A Aircraft Certification in FY 96.)

FY 1995 Accomplishments:

L I IAAS ACCOMPINISMINISMISMISMISMISMISMISMISMISMISMISMISMISMI		
•	759	ed/executed technical and airworthiness qualification mission for PEO A
٠	152	152 Managed/executed the Army Aeronautical Design Standards Program.

Provided continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems. Continued to ensure safety-of-flight investigations/assessments for PEO Aviation force modernization aircraft systems. Updated airworthiness standards. 90 607 911

Continued to provide test management capability for PEO Aviation program/project/product managers.

tal 2922

FY 1996 Planned Program: Project funded under PE 0605606A Aircraft Certification in FY 96.

FY 1997 Planned Program: Project funded under PE 0605606A Aircraft Certification in FY 96.

Project D089

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A Surv	D TITLE Survivability/Lethality Analysis	PROJECT ysis D089
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to FY 1996	FY 1996 0	FY 1997 0	,
Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	0	0	
Project D089	Page 6 of 27 Pages		Exhibit R-2 (PE 0605604A)

RDT&E BUDGET ITEM JUSTI		ZOLL L	S Z O L	FICATION SHEET (R-2 Exhibit)	1-2 Exhi			DATE	March 1996	ဖ
BUDGET ACTIVITY 6 - Management Support		na. Capara kaji mandana kasa kasa kaji kana ka	PENI 060	PENUMBER AND TITLE 0605604A Survivability/Lethality Analysis	IITLE Survivabi	lity/Leth:	ality Ana	lysis	<u> </u>	PROJECT D181
COST (In Thousands) FY 1995 F	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D181 Antiradiation Missile Counter - Countermeasures 1037	1037	0	0	0	0	0	0		0	0

objectives are to understand the capabilities of threat ARMs and how they work. The project provides simulation and hardware tools for both proposed and fielded ARM A. Mission Description and Budget Item Justification: Project D181 - Antiradiation Missile Counter-Countermeasures (ARM-CCM): The ARM-CCM project countermeasures as well as techniques and methodologies which support ARM-CCM investigations.

FY 1995 Accomplishments:

Conducted/coordinated EWVA of ARM threats to U.S. and Allied systems in support of the Army ARM Counter-Warfare Program. 152 295 292

Provided simulation support to ARM-CCM projects.

Provided survivability analysis of proposed and fielded ARM countermeasures.

Developed hardware, tools, techniques, and methodologies to support ARM-CMM.

Total

FY 1996 Planned Program: Beginning in FY 1996 work and funds restructured to Projects D670, D671, D672, D675, and D678 within this PE.

FY 1997 Planned Program: Beginning in FY 1996 work and funds restructured to Projects D670, D671, D672, D675, and D678 within this PE.

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY 1996)	1063	0	0	
Appropriated Amount (FY 1995)	1041			
Adjustments to FY 1995	4-			
Appropriated Amount (FY 1996)				
Adjustments to FY 1996				
Adjustments to Budget Year (FY 1997) since				
FY 1996 President's Budget				
Current President's Budget Submit	1037	0	0	

Project D181

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	TITLE Survivabil	lity/Letha	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	/sis	d U	РRОЈЕСТ D190
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D190 Integrated Analysis	6765	0	0	0	0	0	0		0	0

munitions to the full spectrum of battlefield threats. The analysis is integrated across all battlefield threats, i.e., conventional ballistic, electronic warfare, directed energy, susceptibility to out-of-band radio frequency (RF) countermeasure effects. This project also includes the Army Electronic Warfare (EW) signature measurement program A. Mission Description and Budget Item Justification: Project D190 - Integrated Analysis: This project provides supporting technology and data for the Army's integrated survivability analysis program to conduct survivability (SLV) analysis on Army systems and funds the investigation of the lethality/vulnerability of smart nuclear weapons effect, and nuclear and chemical/biological contamination effects. This project supports development of the Army initiative to reduce systems' and the assessment of laser countermeasure (CM) effects on Army optical/electro-optical (O/EO) systems. This project also supports investigations of new technologies/methodologies required for SLV analyses.

FY 1995 Accomplishments:

1 1333 ACCOMPINITIONS	COMPINE	IIIICINA
•	1970	1970 Managed the U.S. Army survivability/lethality integrated analysis programs (Air Defense, Aviation Systems, C41/1EW, Ground Systems, Munitions,
		and Integrated Soldier System) for 38 systems under development or in improvement cycles and participated in the ARL FOCUS programs, Battle
		Labs and ATD initiatives, and special projects for ARL, AMC, and HQDA.
•	3210	Through laboratory simulations, computer modeling, and field experiments, conducted, electronic warfare and ballistic survivability/lethality analysis
		process for U.S. Army smart munitions including Javelin, Hellfire Longbow, and WAM.
•	1585	Investigated the effects of new/advanced threat technology on systems in the integrated analysis area.
Total	6765	

FY 1996 Planned Program: Beginning in FY 1996 work and funding restructured to Projects D670, D671, D672, D675, D677, D678, and D679 within this PE.

FY 1997 Planned Program: Beginning in FY 1996 work and funding restructured to Projects D670, D671, D672, D675, D677, D678, and D679 within this PE.

Project D190

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	THE RESERVE TO THE PROPERTY OF		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A SURV	Survivability/Lethality Analysis	PROJECT Sis D190
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to FY 1996	FY 1996 0	FY 1997 0	
Augustinents to Budget 1 ca (1.1 1221) since FY 1996 President's Budget Submit Current President's Budget Submit	0	0	
Project D190	Page 9 of 27 Pages	Exhibit	Exhibit R-2 (PE 0605604A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION SE	HEET (R	-2 Exhi	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	ritte urvivabi	TITLE Survivability/Lethality Analysis	lity Ana	lysis	D. L.	PROJECT D234
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D234 Close Combat/Fire Support Survivability Analysis	6850	0	0	0	0	0	0		0	0
A. Mission Description and Budget Item Justification: Project D234 - Close Combat/Fire Support Survivability/Lethality: Project investigates the survivability and vulnerability of Army ground combat systems to the full spectrum of battlefield threats; and the lethality of Army fire support munitions (smart and conventional). Analysis will support weapon requirements, test and evaluation master plans, cost/operational effectiveness analysis, and major decision milestones.	<u>ation:</u> Proje full spectru on master pla	ct D234 - Cl n of battlefie ns, cost/oper	lose Comba Id threats; a ational effec	t/Fire Suppond the lethal	ort Survival ity of Army Iysis, and m	t D234 - Close Combat/Fire Support Survivability/Lethality: Project of battlefield threats; and the lethality of Army fire support munitions (s, cost/operational effectiveness analysis, and major decision milestones.	lity: Projec munitions (t investigate smart and co	s the survival onventional).	oility and Analysis
 FY 1995 Accomplishments: 3273 Through laboratory simulations, computer modeling, and field experiments, conducted, EWVA and ballistic survivability/lethality investigations/analysis of U.S. Army ground systems such as AFAS/FARV, AGS, Breacher, Bradley, MI Abrams, and M109 Howitzer systems. 1510 Conducted EWVA investigations on SADARM, STAFF, M829A2, BAT, LOSAT, TOW ITAS, and ATACMS (APAM) munitions. 2067 Provided signature measurements and computer modeling and simulation for integrated survivability/lethality analyses of U.S. Army ground sys and smart munitions. 	ns, computer . Army grou ions on SAD ents and con	modeling, a nd systems s ARM, STAF iputer model	nd field exp uch as AFA's F, M829A2 ing and simi	eriments, co S/FARV, AC , BAT, LOS. ulation for ir	nducted, EW 3S, Breacher AT, TOW IT tegrated sur	/VA and bal ; Bradley, M FAS, and AT vivability/le	listic surviw II Abrams, 'ACMS (AF thality analy	ability/lethal and M109 H AM) muniti 'ses of U.S	modeling, and field experiments, conducted, EWVA and ballistic survivability/lethality d systems such as AFAS/FARV, AGS, Breacher, Bradley, MI Abrams, and M109 Howitzer systems. ARM, STAFF, M829A2, BAT, LOSAT, TOW ITAS, and ATACMS (APAM) munitions. puter modeling and simulation for integrated survivability/lethality analyses of U.S. Army ground systems	rms. systems
FY 1996 Planned Program: Beginning in FY 1996 work and fun	work and fu	nding restru	ctured to Pro	jects D677 a	and D678 w	ding restructured to Projects D677 and D678 within this PE.				ec halfour.
FY 1997 Planned Program: Beginning in FY 1996 work and fun	work and fu	nding restru	ctured to Pro	jects D677 a	and D678 w	ding restructured to Projects D677 and D678 within this PE.				
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)		EX 1995 6938 6869 -19		FY 1996 0	FY 1997 0					
Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget. Current President's Budget Submit		6850		0	0					
Project D234			Page 10 of 27 Pages	27 Pages			Exhib	Exhibit R-2 (PE 0605604A))605604A)	

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BUDGET ACTIVITY 6 - Management Support			PE NI	PE NUMBER AND TITLE 0605604A Surv	IITLE Survivabi	Survivability/Lethality Analysis	ility Anal			PROJECT D235
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	on the state of th	Cost to Complete	Total Cost
D235 Missile Counter - Countermeasure Technology	629	0	0	0	0	0	0		0	0
A. Mission Description and Budget Item Justification: Project D235 - Missile Counter-Countermeasure Technology: Supports Program Management Offices by development of CM/CCM hardening techniques that missile systems use against laser, Radio Frequency (RF), and directed energy threats. Supports modeling to investigate vulnerabilities of systems to air defense systems. Supports investigations of missile signatures and exploitability. Investigates technology to harden optical windows against lasers, RF, and directed energy threats. Also funds salaries, travel, equipment, and general management/administrative support.	ation: Projet missile syst apports inves	ect D235 - M tems use aga trigations of el, equipmen	lissile Coun inst laser, Re missile signa t, and gener	ter-Counter adio Frequen atures and ex al manageme	measure Tecy (RF), and ploitability.	chnology: d directed en Investigates rative suppor	Supports Pre ergy threats s technology rt.	ogram Mans Supports r to harden o	D235 - Missile Counter-Countermeasure Technology: Supports Program Management Offices by is use against laser, Radio Frequency (RF), and directed energy threats. Supports modeling to investigations of missile signatures and exploitability. Investigates technology to harden optical windows aggequipment, and general management/administrative support.	es by ıvestigate vs against
FY 1995 Accomplishments: 175 Continued to improve/upgrade hardening techniques, investigate, and develop new technology advanced CCM application. 307 Continued to conduct test and analysis to determine the susceptibility characteristics of selected weapon systems to specific environments and to specify the appropriate CCM techniques and validate the CCM effectiveness. 177 Verified and validated the one-one simulation with measured data to determine the region of validity.	te hardening d analysis to techniques	techniques, determine th and validate in	investigate, e susceptibi the CCM efi	and develop lity character fectiveness. lata to detern	new technol ristics of sele	logy advance scted weapor on of validit	ed CCM app n systems to y.	lication. specific env	/ironments ar	d to
7.										
FY 1997 Planned Program: Project not funded.										
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Amount (FY 1996)		FY 1995 672 660 -1		FY 1996 0	FY 1997 0					
Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget. Current President's Budget Submit		9	629	0	0					
Project D235			Page 11 c	Page 11 of 27 Pages	ineges of active and a second of the second	STATEMENT STATEMENT AND A STAT	Exhi	bit R-2 (PE	Exhibit R-2 (PE 0605604A)	





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вирдет АСТІМТУ 6 - Management Support			PE NI 0 6 0	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	птс urvivabi l	lity/Letha	lity Anal	ysis	.	PROJECT D267
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D267 Air Defense/Missile Defense System Vulnerability	7910	0	0	0	0	0	0		0)

A. Mission Description and Budget Item Justification: Project D267 - Air Defense/Missile Defense System Vulnerability: Provides the survivability/lethality analysis of U.S. Army air defense and missile defense systems to the full spectrum of battlefield threats and recommends fixes to improve their battlefield survivability. The results programs; by the user to develop doctrine and tactics; and by decision makers in formulating program/production decisions. Beginning in FY 1996 the work and funds are are used by each Project Manager (PM) and the Program Executive Officer (PEO) to direct weapon system development efforts and structure product improvement restructured to Projects D670 and D671 within this PE.

FY 1995 Accomplishments:

- Conducted EWVA of U.S. Army air defense systems including PATRIOT, Stinger-RMP, Avenger, Corp SAM, HAWK, GBS, and MRSR. Conducted EWVA of U.S. Army missile defense systems including THAAD, ERINT, and GBR 1559
 - Conducted ballistic susceptibility/vulnerability/lethality analyses of U.S. Army air defense/missile defense systems.
- Provided EWVA and ballistic modeling and simulation support for survivability/vulnerability/lethality analysis of U.S. Army air defense/missile 2030
 - Developed necessary SLV analyses, methodologies, capabilities and techniques to ensure soldier survivability. defense systems. 557 7910

FY 1996 Planned Program: Beginning in FY 1996 work and funds restructured to Projects D670 and D671 within this PE.

FY 1997 Planned Program: Beginning in FY 1996 work and funds restructured to Projects D670 and D671 within this PE.

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY 1996)	8024	0	0	
Appropriated Amount (FY 1995)	7933			
Adjustments to FY 1995	-23			
Appropriated Amount (FY 1996)				
Adjustments to FY 1996				
Adjustments to Budget Year (FY 1997) since				
FY 1996 President's Budget				
Current President's Budget Submit	7910	0	0	

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Project D267

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEN JUS	TIFICA	TION SI		?-2 Exhi	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support	AN AND AND AND AND AND AND AND AND AND A		PE NI 06(PE NUMBER AND TITLE 0605604A SURV	Survivability/Lethality Analysis	lity/Letha	nity Anal	ysis		PROJECT D626
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D626 C4I Survivability	6291	0	0	0	0	0	0		0	0
A. Mission Description and Budget Item Justification: Project D626 - C4I Survivability: Supports survivability analysis of Army communications and electronic equipment against the full spectrum of friendly and enemy threats. Provides field threat environment support for EWVA. Analyzes vulnerabilities of foreign threat weapons and command, control, communications, computers and intelligence (C4I) and Intelligence Electronic Warfare (IEW) systems to U.S. Army EW systems. Provides threat weapon electronic design data to countermeasure developers and technical capability information to the intelligence community. Supports Army initiatives in vulnerability reduction of C4I/IEW systems against the full spectrum of battlefield threats. In FY 1996, work and funding in this project is restructured to Projects D670 and D675 within this PE.	cation: Proje d enemy threa computers an sure develope t the full spect	ct D626 - C ts. Provides d intelligenc rs and techr frum of battl	41 Survival s field threat e (C41) and l nical capabili	oility: Supp environmen Intelligence ity informati S. In FY 199	orts survivat the support for Electronic W on to the inte '6, work and	ility analysis EWVA. An 'arfare (IEW elligence con funding in th	of Army con alyzes vulno systems to umunity. Su unis project is	emmunication of stabilities of U.S. Army phoorts Arm restructure	626 - C4I Survivability: Supports survivability analysis of Army communications and electronic Provides field threat environment support for EWVA. Analyzes vulnerabilities of foreign threat elligence (C4I) and Intelligence Electronic Warfare (IEW) systems to U.S. Army EW systems. Provide: nd technical capability information to the intelligence community. Supports Army initiatives in of battlefield threats. In FY 1996, work and funding in this project is restructured to Projects D670 and	onic at Provides in D670 and
 FY 1995 Accomplishments: 2298 Conducted integrated survivability/lethality analysis for the Army Battlefield Command System (ABCS) and all of its functional area systems and their improvements. 2201 Performed EWVA and ballistics SLA on Army communications systems and their improvements. 1792 Through laboratory simulations, computer modeling, and field experiments, performed EWVA and ballistics SLA on Army IEW systems such as BCIS, JSTARS, and enhanced Firefinder. Total 6291	ability/lethali stics SLA on , ons, compute	ty analysis f Army comm r modeling,	or the Army nunications s; and field ext	Battlefield (ystems and t yeriments, pu	Command Sy their improve erformed EW	stem (ABCS ements. ///A and ball	s) and all of listics SLA o	its functiona on Army IE'	ialysis for the Army Battlefield Command System (ABCS) and all of its functional area systems and y communications systems and their improvements. deling, and field experiments, performed EWVA and ballistics SLA on Army IEW systems such as	rs and ch as
FY 1996 Planned Program: Beginning in FY 1996 work and funding restructured to Projects D670 and D675 within this PE.	96 work and f	unding restr	uctured to P	rojects D670) and D675 v	vithin this PE	r~i			
FY 1997 Planned Program: Beginning in FY 1996 work and fundi	96 work and f	unding restr	uctured to P	rojects D670	ing restructured to Projects D670 and D675 within this PE.	vithin this PE	rvi			
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since		FY 1995 6364 6305 -14		FY 1996 0	F <u>Y 1997</u> 0					
FY 1996 President's Budget Current President's Budget Submit		6291	91	0	0					
Project D626			Page 13 o	Page 13 of 27 Pages	e de la companya de l	A POST A SECURITION OF THE PARTY OF THE PART	Exhit	oit R-2 (PE	Exhibit R-2 (PE 0605604A)	





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	FION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
вирбет АстіVITY 6 - Management Support			PE NL 060	PE NUMBER AND TITLE 0605604A Surv	E NUMBER AND TITLE 3605604A Survivability/Lethality Analysis	ity/Letha	lity Anal	ysis	Z (1)	РRОЈЕСТ D670
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D670 Emerging Technology Systems	0	5418	4879	5278	5243	5022	5590		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project D670 - Emerging Technology Systems: This project performs integrated SLA for a category of systems which includes Horizontal Technology Integration systems, Advanced Technology Demonstration initiatives, and Anti-Radiation Missile (ARM) Counter-ARM systems. accomplished through theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations. This effort Location Reporting System (EPLRS). Advanced Technology Demonstration initiatives include Active Protection Systems (APS), and Missile Countermeasure Devices also supports HQDA, PEOs, PMs and independent evaluators with EW, chemical, biological, nuclear, meteorological, and ballistic expertise to conduct special studies, systems include 2ND Generation FLIR (2ND GEN FLIR), Battlefield Combat Identification System (BCIS), Global Positioning System (GPS), and Enhanced Position support TIWGs and program reviews, acquisition documentation review, and provides Government testers with technical support. Horizontal Technology Integration Survivability deficiencies are identified and recommendations are made to PEO/PMs to provide hardening fixes early on in program development. This work is (MCD). This project also provides oversight of the Army's Electromagnetic Environmental Effects (E3) Program.

FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.

FY 1996 Planned Program:

T. I. 1770 I BRILLIA I 1061 BILL	
• 26!	2696 Conduct EW performance analyses, to include infrared (IR), radio frequency (RF), and electro-optical spectrums to support integrated survivability
	and lethality analyses. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports.
	This work supports 2ND GEN FLIR, BCIS, GPS, APS, EPLRS, and E3.
. 14.	1420 Conduct analyses to determine ballistic effects. Develop system description models, perform damage simulations, and collect experimental data to
	support integrated survivability and lethality analyses. Develop necessary test beds to conduct experiments, and prepare interim survivability
	analysis reports. This work supports 2ND FLIR, BCIS, GPS, APS, and EPLRS.
•	1144 Conduct analyses to address nuclear hardening and survivability, chemical and biological warfare contamination and decontamination, and dirty
	battlefield conditions. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports.
	This work supports 2ND GEN FLIR, BCIS, GPS, APS, EPLRS, and E3.
•	120 Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of
	1992.
•	38 Revised Economic Assumption not available for Execution
Total 54	5418

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Project D670

RDT&E BUDGET ITEM JUSTIF	FICATION SHEET (R-2 Exhibit)	(R-2 Exhibit) DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A Surv	ND TITLE Survivability/Lethality Analysis	PROJECT D670
FY 1997 Planned Program: 2397 Conduct EW vulnerability assessments to support int technology applications. Develop necessary test bed Support the Army's E3 program. 1485 Conduct ballistic effects investigations, develop syste integrated survivability and lethality analysis reports. 997 Conduct engineering investigations addressing nucles decontamination, and dirty battlefield conditions to stechnology applications. Develop necessary test bed Total	rt integrated survivability a beds to conduct laboratory system description models, oorts. uclear hardening and survi s to support integrated survi t beds to conduct laboratory	ogram: Conduct EW vulnerability assessments to support integrated survivability and lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports. Support the Army's E3 program. Conduct ballistic effects investigations, develop system description models, perform damage simulations, and collect experimental data to support integrated survivability and lethality analysis reports. Conduct engineering investigations addressing nuclear hardening and survivability, chemical and biological warfare contamination and decontamination, and dirty battlefield conditions to support integrated survivability/lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports.	stems and horizontal irvivability analysis reports. imental data to support nination and gy systems and horizontal irvivability analysis reports.
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	FY 1995 FY 1996 0 5570	FY 1997 5512	
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since	5473 -55	-633	and and a Creation was been and
FY 1996 President's Budget Current President's Budget Submit	0 5418	4879	
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumptions (-55). Funding: FY 97 - Reflects funds moved to higher priority preflects funds moved to higher priority preflects funds moved to higher priority preflects funding: FY 97 - Revised Economic Assumptions (-133).	program (-500).		
Project D670	Page 15 of 27 Pages		Exhibit R-2 (PE 0605604A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION SE	EET (F	-2 Exhi	bit)		DATE	March 1996	9
вироет Астииту 6 - Management Support	nt Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	TITLE Urvivabi	lity/Leth	БТІТІЕ Survivability/Lethality Analysis	1		PROJECT D671
Ō	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D671 Air Defense/Mis	Air Defense/Missile Defense Systems	0	6329	5818	6224	6570	6452	6850		Continuing	Continuing
A. Mission Descrip Army air defense and by each Project Manduser to develop doctr Theater Missile Defe salaries, travel, equip	A. Mission Description and Budget Item Justification: Project D671 - Air Defense/Missile Defense Systems: Provides the survivability/lethality analysis of U.S. Army air defense and missile defense systems to the full spectrum of battlefield threats and recommends fixes to improve their battlefield survivability. The results are used by each Project Manager (PM) and the Program Executive Officer (PEO) to direct weapon system development efforts and structure product improvement programs; by the user to develop doctrine and tactics; and by decision makers in formulating program/production decisions. ARM Counter-Arm efforts assess threat technologies against Theater Missile Defense (TMD), PATRIOT, JSTARS, Corp SAM/Medium Extended Air Defense System (MEADS), and FAAD-C21 ground based sensors. Also funds salaries, travel, equipment/facilities, and management/administrative support needed to execute the program.	ation: Projectiul spectrul spectrul spectrul cutive Office makers in fers. Corp SAN nt/administra	ct D671 - An of battleff n of battleff er (PEO) to ormulating p M/Medium E	ir Defense/l eld threats an direct weapo rogram/proc xtended Air needed to es	Missile Defe and recomme an system de luction decis Defense Sy eccute the pi	nse Systems nds fixes to i velopment e sions. ARM stem (MEAI ogram.	Frovides improve thei fforts and st Counter-Ai OS), and FA	the survivab ir battlefield ructure prod m efforts as AD-C21 gro	ility/lethality survivability uct improvei sess threat te	/ analysis of U /. The results ment progran schnologies a ensors. Also	J.S. are used ss; by the gainst funds
FY 1995 Accomplis	FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.	ormed in oth	er projects ir	this PE. Ro	estructured t	o this projec	t in FY 1996				
FY 1996 Planned Program:	Conduct the electronic warfare vulnerability assessment for U.S. Army air defense and missile defense systems that are in development, undergoing P31, or have been recently fielded. Examples of such systems are PATRIOT, Corp SAM/Medium Extended Air Defense System (MEADS), Stinger-RMP, Avenger, GBS, TMD-GBR, THAAD, and BSFV-E. Conduct the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems. Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 96. Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. Revised Economic Assumption not available for Execution Revised Economic Assumption warfare vulnerability assessment for U.S. Army air defense and missile defense systems that are in development, undergoing P31 or have been recently fielded. Examples of such systems are PATRIOT. Corn SAM/Medium Extended Air Defense System (MEADS) Stinger-	e vulnerabili ded. Examp iBR, THAAI ility/lethality cal, nuclear, ty/lethality a for SBIR/ST on not availat e vulnerabili ded. Examp	ty assessment for les of such system of, and BSFV-E. analysis for U.S and atmospheric nalyses to suppor I'R Programs in a le for Execution by assessment for les of such system of such sy	tt for U.S. A systems are I / E. U.S. Army neric effects pport schedus in accordantion t for U.S. Au	rmy air defe PATRIOT, C air defense a survivability aled air defe nce with the rmy air defe	nse and missorp SAM/M and missile d v analysis for nse/missile c Small Busin nse and miss our SAM/M	ie defense ledium Exte lefense syste r U.S. Army lefense progess Innovati iile defense edium Exter	y assessment for U.S. Army air defense and missile defense systems that are in development, utes of such systems are PATRIOT, Corp SAM/Medium Extended Air Defense System (MEAD), and BSFV-E. analysis for U.S. Army air defense and missile defense systems. and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems in accordance with the Small Business Innovation Research Program Reauthorizate for Execution y assessment for U.S. Army air defense and missile defense systems that are in development, sheroles systems are PATRIOT. Corn SAM/Medium Extended Air Defense System (MEAD).	are in devel fense Systen and missile o milestones Program Re	y assessment for U.S. Army air defense and missile defense systems that are in development, undergoing les of such systems are PATRIOT, Corp SAM/Medium Extended Air Defense System (MEADS), Stinger-3, and BSFV-E. and BSFV-E. analysis for U.S. Army air defense and missile defense systems. analysis for U.S. Army air defense and missile defense program decision milestones in FY 96. IR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of le for Execution y assessment for U.S. Army air defense and missile defense systems that are in development, undergoing less of such systems are PATRIOT. Corn SAM/Medium Extended Air Defense System (MFADS). Stinger-	rgoing Stinger- ns. Act of argoing Stinger-
	RMP. Avenger, GBS. TMD-GBR, BSFV-E, and THAAD.	BSFV-	E. and THA	AD.	, (,)			,	Total of Serving	(Company)	1,9,11

RMP, Avenger, GBS, TMD-GBR, BSFV-E, and THAAD.
Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems.

Conduct the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems. 1208 966 274 5818

Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY97.

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Project D671

Total

Procession Pro	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SOST BRE	AKDOWN (R-3) DATE March 1996
EY 1995 EY 1997 6423 6423 6423 6423 6423 60 6359 since 0 6359 6359 5818 nomic Assumptions (-64). nomic Assumptions (-158). Page 17 of 27 Pages	вирсет АстіVITY 6 - Management Support		Survivability/Lethality Analysis D671
sed Economic Assumptions (-64). sed Economic Assumptions (-158). Page 17 of 27 Pages	FY 1999 since	6423 6423 6423 6359	FY 1997 6476 -658 5818
Page 17 of 27 Pages	Change Summary Explanation: Funding: FY 96 - Revised Economic Assumptions (-64). Funding: FY 97 - Reflects movement of funds to higher priority program Funding: FY 97 - Revised Economic Assumptions (-158).	(-500).	
	Project D671	Page 17 of 27 Pages	Exhibit R-3 (PE 0605604A)

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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	IFICATION SHEET (R-2 Exhibit)	EET (R	-2 Exhi	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support	nt Support			PE NU 060	PE NUMBER AND TITLE 0605604A Surv	ппсе urvivabi	> TITLE Survivability/Lethality Analysis	lity Anal	ysis		РКОЈЕСТ D672
Ó	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D672 Aviation Systems	าร	0	4346	3739	3673	3777	3821	3873		Continuing	Continuing
A. Mission Descrip of battlefield threats. reviews, acquisition technology which mi	A. Mission Description and Budget Item Justification: Project D672 - Aviation Systems: Project investigates the SLV of Army aviation systems to the full spectrum of battlefield threats. Aircraft SLV deficiencies are identified and hardening fixes identified as appropriate. SLV analysis directly supports major decision milestone reviews, acquisition documentation, test and evaluation master plans, and cost/operational effectiveness analyses. In FY 1996, provides for assessment of acoustic technology which might be developed to exploit potential susceptibilities of helicopters.	ation: Proje identified an ion master p ential suscep	ct D672 - Ad hardening lans, and co	iviation Systixes identifictions stoperations helicopters.	tems: Proje fied as appro al effectiven	ct investigate priate. SLV ess analyses.	es the SLV o analysis dir In FY 1996	of Army avia ectly suppor i, provides fo	tion system ts major dec or assessme	s to the full s sision milestc nt of acoustic	oectrum ne
FY 1995 Accomplist	FY 1995 Accomplishments:: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.	rformed in o	ther project	s in this PE.	Restructure	d to this proj	ject in FY 19	.96.			
FY 1996 Planned Program:	rogram: Conduct the electronic warfare vulnerability assessment for U.S. Army aviation systems that are in development, undergoing P31, or have been recently fielded. Examples of such systems are RAH-66 Comanche, AH-64D Longbow Apache, MH-60K & MH-47E Special Operations Aircraft, OH-58D Kiowa Warrior, CH-47D Chinook, and UH-60Q Ambulance. Conduct the ballistic survivability/lethality analysis for U.S. Army aviation systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army aviation systems program decision milestones in FY 96. Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. Revised Economic Assumption not available for Execution rogram: Conduct the electronic warfare vulnerability assessment for U.S. Army aviation systems that are in development, undergoing P31, or have been recently fielded. Examples of such systems are AH-64D Longbow Apache, OH-58D Kiowa Warrior, MH-60K & MH-47E Special Operations Aircraft, RAH-66 Comanche, CH-47D Chinook, and UH-60Q Ambulance. Conduct the ballistic survivability/lethality analysis for U.S. Army aviation systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army aviation systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army aviation systems.	e vulnerabilii Such system 47D Chinoo ility/lethality ical, nuclear, ty/lethality a for SBIR/ST for SBIR/ST for L47D Ch ility/lethality ical, nuclear, ity/lethality ical, nuclear, ity/lethality	ly assessme is are RAH- k, and UH-(analysis fo and atmosp nalyses to single for Exect of a are AH-6 inook, and it assessme is are AH-6 inook, and it and and atmosp and atmosp nalyses to sinalysis for analyses to sinalyses to sinalyses to sinalyses to sinalyses are AH-6	nt for U.S. A 66 Comanch 50Q Ambula r U.S. Army heric effects upport sched is in accorda ution ution r U.S. Army vr U.S. Army heric U.S. Army heric effects	rmy aviation le, AH-64D nce. aviation system aviation system aviation nce with the language of	Longbow Alterns. tems. y analysis fon systems pr. Small Busin H-58D Kiow stems. y analysis fon systems pr.	at are in deve pache, MH-6 or U.S. Army ogram decisi ness Innovati at are in dev va Warrior, h or U.S. Army	elopment, ur 60K & MH-4 7 aviation sysion mileston 10 Research 10 MH-60K & I 11 Aviation sysion mileston	rdergoing P: rtems. es in FY 96. rdergoing P rdergoing P rderms. es in FY97.	arsessment for U.S. Army aviation systems that are in development, undergoing P3I, or have been are RAH-66 Comanche, AH-64D Longbow Apache, MH-60K & MH-47E Special Operations Aircraft, and UH-60Q Ambulance. and UH-60Q Ambulance. and UH-60Q Ambulance. and atmospheric effects survivability analysis for U.S. Army aviation systems. alyses to support scheduled aviation systems program decision milestones in FY 96. R Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of a For Execution assessment for U.S. Army aviation systems that are in development, undergoing P3I, or have been are AH-64D Longbow Apache, OH-58D Kiowa Warrior, MH-60K & MH-47E Special Operations analysis for U.S. Army aviation systems. analysis for U.S. Army aviation systems. alyses to support scheduled aviation systems program decision milestones in FY97.	ircraft, n Act of een ons

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Project D672

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT	COST BRE		DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A SURV	D TITLE Survivability/Lethality Analysis	The state of the s
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	EX 1995 0	FY 1996 4467	F <u>Y 1997</u> 3840	,
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since		4389	-101	
FY 1996 President's Budget Current President's Budget Submit	0	4346	3739	
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumptions (-43). Funding: FY 97 - Revised Economic Assumptions (-101).	<u>.</u>			
Project D672	Pag	Page 19 of 27 Pages		Exhibit R-3 (PE 0605604A)
		1162		





RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	TION SF	IEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE M	Warch 1996	9
вироет астіуіту 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605604A Surv	ritle urvivabil	lity/Letha	E NUMBER AND TITLE 3605604A Survivability/Lethality Analysis	/sis	a O	PROJECT D675
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D675 C4l/IEW Systems	0	4999	5027	4947	4827	4688	5150		Continuing	Continuing Continuing

Provides threat weapon electronic design data to countermeasure developers and technical capability information to the intelligence community. Supports Army initiatives A. Mission Description and Budget Item Justification: Project D675 - C4/IEW Systems: Supports survivability analysis of Army communications and electronic equipment against the full spectrum of friendly and enemy threats. Provides field threat environment support for EWVA. Analyzes vulnerabilities of foreign threat weapons and command, control, communications, computers and intelligence (C4I) and Intelligence Electronic Warfare (IEW) systems to U.S. Army EW systems. in vulnerability reduction of C4I/IEW systems against the full spectrum of battlefield threats, including information warfare.

FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.

FY 1996 Planned Program:

- Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army communications systems such as Mobile Subscriber Equipment, SINCGARS, Global Positioning System, Single Channel Anti-jam Man Portable radio, Secure Mobile Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army intelligence and electronic warfare (IEW) systems such as the Battlefield Combat Identification System, enhanced Firefinder radar, and Joint Surveillance Target control systems. This effort supports Maneuver Control System, Common Hardware and Software, Standard Integrated Command Post Shelter, Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command and Provide integrated survivability/lethality analyses to support scheduled C4I/IEW systems program decision milestones in FY 96. Advanced Field Artillery Tactical Data System, FAAD-C21, and Combat Service Support Control System. Anti-jam Reliable Tactical Terminal, and Enhance Manpack UHF-Terminal. Attack Radar System/Ground Station Module. 966 1589 194
 - Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of Revised Economic Assumption not available for Execution 35 4999

FY 1997 Planned Program:

Total

Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command and control systems. This effort supports the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C21, Standard Integrated Command Post Shelter, and Combat Service Support Control System.

Project D675

Exhibit R-2 (PE 0605604A)

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RDT&E BUDGET ITEM JUSTI	FICATION SHEET (R-2 Exhibit)		Commission of the control of the con	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PENI 060	PE NUMBER AND TITLE 0605604A Surv	Survivability/Lethality Analysis	PROJECT Sis D675
	hemical/biological/nu ning System, Mobile S nance Manpack UHF hemical/biological/nu Battlefield Combat Id ar.	uclear/atmosy Subscriber E Terminal. uclear/atmosy (dentification	pheric effects survivability analysis for equipment, Single Channel Anti-jam Mpheric effects survivability analysis for System, Joint Surveillance Target Att	U.S. Army communications an Portable radio, Secure Mobile U.S. Army intelligence and tek Radar System/Ground
 212 Provide integrated survivability/lethality analyses to support scheduled C41/1EW systems program decision milestones in FY97. Total 5027 	yses to support sched	Tuled C41/1E/	w systems program decision milestone	Sin rigy.
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit Change Summary Explanation: Funding: FY 96 - Revised Economic Assumptions (-51). Funding: FY 97 - Revised Economic Assumptions (-137).	EY 1995 0 0	5140 5140 5050 -51 4999	FY 1997 5164 -137 5027	
Project D675	Page 21 of 27 Pages	f 27 Pages	Exhibit	Exhibit R-2 (PE 0605604A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	oit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605604A Survi	ritle urvivabil	ity/Letha	E NUMBER AND TITLE JEOSEGO AND TITLE SURVIVABILITY/Lethality Analysis	sis	ā U	РRОЈЕСТ D677
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D677 Ground Combat Systems	0	5846	5337	5732	6349	6229	6706		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project D677 - Ground Combat Systems: Project investigates the survivability and vulnerability of Army ground combat systems to the full spectrum of battlefield threats. Analysis will support weapon requirements, test and evaluation master plans, cost/operational effectiveness analysis, and major decision milestones.

FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.

FY 1996 Planned Program

LI 1990 Flammed Flogram		Opt all the second seco
•	1758	1758 Conduct the electronic warfare vulnerability assessment for U.S. Army ground combat systems. This effort supports such systems as Bradley A3,
		Command and Control Vehicle (C2V), Crusader (AFAS/FARV), ABRAMS M1A2, Breacher, and Heavy Assault Bridge.
• 2	2367	Conduct the ballistic survivability/lethality analysis for U.S. Army ground combat systems.
•	1327	Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army ground combat systems.
•	223	Provide integrated survivability/lethality analyses to support scheduled ground combat systems program decision milestones in FY 96.
•	130	Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of
		1992.
•	41	41 Revised Economic Assumption not available for Execution
Total 5	5846	

FY 1997 Planned Program:

	Comn 2296 Condi 1401 Condu 242 Provi	Command and Control Vehicle, ABRAMS M1A2, Breacher, Heavy Assault Bridge and the Family of Medium Tactical Vehicles (FMTV). Command and Control Vehicle, ABRAMS M1A2, Breacher, Heavy Assault Bridge and the Family of Medium Tactical Vehicles (FMTV). Conduct the ballistic survivability/lethality analysis for U.S. Army ground combat systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analyses to support scheduled ground combat systems program decision milestones in FY97.
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Project D677

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COLECT	COST BRE	AKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A Surv	ЭППЕ Survivability/Lethality Analysis	PROJECT D677
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	FX 1995 0	<u>FY 1996</u> 6010	FY 1997 5982	,
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since		5905	-645	
Current President's Budget Submit	0	5846	5337	
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumption (-59). Funding: FY 97 - Reflect movement of funds to higher priority program (-500). Funding: FY 97 - Revised Economic Assumption (-145).	ority program	(-500).		
Project D677	Pag	Page 23 of 27 Pages	Exh	Exhibit R-3 (PE 0605604A)
		1166		

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RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	ION S	IEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NO	PE NUMBER AND TITLE 0605604A Surv	ritle urvivabil	lity/Letha	E NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	ysis	.	РРОЈЕСТ D678
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D678 Munitions Systems	0	5819	5729	5614	6193	6062	6563		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project D678 - Munitions Systems: This project funds the investigation of the lethality/vulnerability of Army fire support smart weapons (smart and conventional) to the full spectrum of battlefield threats. The analysis is integrated across all battlefield threats, i.e., conventional ballistic, electronic warfare, directed energy, nuclear weapons effects, and nuclear and chemical/biological contamination effects. This work is accomplished through theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations.

FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.

FY 1996 Planned Program:

• 4033	4033 Conduct the electronic warfare vulnerability assessment for U.S. Army munitions systems such as the Hellfire Longbow Missile, BAT/BAT P3I, Wide
	Area Mine, STAFF, and Javelin.
989	Conduct the ballistic survivability/lethality analysis for U.S. Army munitions systems.
• 741	Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army munitions systems.
• 188	Provide integrated survivability/lethality analyses to support scheduled munitions systems program decision milestones in FY 96.
• 130	Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of
	1992.
• 41	Revised Economic Assumption not available for Execution
Total 5819	

FY 1997 Planned Program:

T. I. 1777 A MAILIN	r i 1777 a familieu i logi ami:	
• 4(4026 Conduct the electronic warfare vulnerability assessment	4026 Conduct the electronic warfare vulnerability assessment for U.S. Army munitions systems such as BAT/BAT P31, Hellfire Longbow Missile, STAFF,
	Wide Area Mine, Javelin, EFOG-M, FOT TOW and MSTAR.	TAR.
•	725 Conduct the ballistic survivability/lethality analysis for U.S. Army munitions systems.	J.S. Army munitions systems.
•	778 Conduct the chemical, biological, nuclear, and atmosphe	Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army munitions systems.
•	200 Provide integrated survivability/lethality analyses to sup	Provide integrated survivability/lethality analyses to support scheduled munitions systems program decision milestones in FY97.
Total 57	5729	

Project D678

1167

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT O	SOST BRE	AKDOWN (R-3) DATE	TE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A SURV	TITLE Survivability/Lethality Analysis	PROJECT D678
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	FY 1995 0	FY 1996 5982 5877 -58 5819	F <u>Y 1997</u> 5885 -156 5729	
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumption (-58). Funding: FY 97 - Revised Economic Assumption (-156).	ŗ			
Project D678	Page	Page 25 of 27 Pages 1168		EXNIBIT K-3 (PE UBU38U4A)



RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	FIFICATION SHEET (R-2 Exhibit)	-2 Exhil	oit)]	DATE M	March 1996	မွ
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	ritle urvivabil	ity/Letha	E NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	sis	<u>a</u> 0	РRОЈЕСТ D679
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D679 Soldier Systems	0	808	814	798	775	785	795		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project D679 - Soldier Systems: This project provides the Soldier Survivability Assessments (SSvA) required for the MANPRINT Soldier Survivability Domain. The survivability of soldier systems is investigated and reported to milestone decision reviews. Broad areas addressed Manpower, Personnel, and Training goals and constraints. A major thrust of this project is to identify any problems in design characteristics which should be corrected to by SSvA are: Fratricide reduction; soldier detectibility reduction; attack prevention if detected; damage prevention; medical injury reduction; the reduction of mental and physical fatigue as they relate to the operation; maintenance and support of the system being evaluated and how these factors might impact the system's pre-established assure or enhance operational effectiveness.

FY 1995 Accomplishments: Work in this area performed in other projects in this PE. Restructured to this project in FY 1996.

FY 1996 Planned Program:

•	555	555 Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warrior
		System including the Protective Clothing and Individual Equipment, Chem/Bio Mask, Integrated Headgear, Computer and Commo System, and
		Weapon System.
•	114	Coordinate preparation and direct execution of MANPRINT Soldier Survivability Assessments and Reports.
•	115	115 Provide integrated survivability/lethality analyses to support scheduled soldier systems program decision milestones in FY 96.
•	18	18 Funds will be reprogrammed for SBIR/STTR Programs in accordance with the Small Business Innovation Research Program Reauthorization Act of
		1992.
•	9	Revised Economic Assumption not available for Execution
Total	808	

FY 1997 Planned Program:

•	576	576 Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warri System including the Computer and Commo System, Weapon System, Protective Clothing and Individual Equipment, Chem/Bio Mask, and
		Integrated Headgear.
•	119	Coordinate preparation and direct execution of MANPRINT Soldier Survivability Assessments and Reports.
•	119	Provide integrated survivability/lethality analyses to support scheduled soldier systems program decision milestones in FY97.
Total	814	

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Project D679

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COSTBR		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A SURV	ртіть Survivability/Lethality Analysis	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current Budget Submit	EX 1996 829 815 -7	EX 1997 836 -22 814	
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumptions (-7). Funding: FY 97 - Revised Economic Assumptions (-22).			
Project D679	Page 27 of 27 Pages		Exhibit R-3 (PE 0605604A)
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	IS NOIL	IFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE W	March 1996	9
BUDGET ACTIVITY 6 - Management Support	t Support			PE NE 060 Fac	PE NUMBER AND TITLE 0605605A DOD High Energy Laser System Test Facility (HELSTF)	ritle IOD High _STF)	Energy	Laser Sy	rstem Te		PROJECT DE97
22	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE97 DoD High Energy (HELSTF)	DoD High Energy Laser Systems Test Facility (HELSTF)	23961	34043	2967	0	0	0	0		0	0
A. Mission Description and Ibased high energy laser (HEL) lethality laser testing. The HElfully instrumented test sites and from scaled laboratory up throughownsizing the residual infrast Element 0605601, Army Test linclusion in Budget Activity 6.	A. Mission Description and Budget Item Justification - Project DE97 DoD High Energy Laser Systems Test Facility (HELSTF): The HELSTF provides a broad based high energy laser (HEL) RDTE cápability at White Sands Missile Range, NM in support of tri-service HEL research and development and damage, vulnerability, and lethality laser testing. The HELSTF's laser development support capabilities include a certified laser test range, a fully integrated laser support facility, an extensive array of fully instrumented test sites and the Sea Lite Beam Director (SLBD). This multiple use facility supports testing of laser effects at any power level against any type of target, from scaled laboratory up through full scale flying target tests. The Mid-Infrared Advanced Chemical Laser (MIRACL) will be terminated. The Army will begin downsizing the residual infrastructure, retaining only that portion required to support laser system testing. The remaining mission will transition to the institutional Program Element 0605601, Army Test Ranges/Facilities. Test ranges support operations are required for general research and development; therefore, this PE is appropriate for inclusion in Budget Activity 6.	ation - Proje White Sands ment support Director (SLI arget tests. T y that portion st ranges sup	ict DE97 Do Missile Rang t capabilities 3D). This m he Mid-Infra r required to port operation	b High En ge, NM in si include a coultiple use fared Advance support lassons are required.	ot DE97 DoD High Energy Laser Systems Test Facility (HELSTF): The HELSTF provides a broad dissile Range, NM in support of tri-service HEL research and development and damage, vulnerability, and capabilities include a certified laser test range, a fully integrated laser support facility, an extensive array of iD). This multiple use facility supports testing of laser effects at any power level against any type of target, he Mid-Infrared Advanced Chemical Laser (MIRACL) will be terminated. The Army will begin required to support laser system testing. The remaining mission will transition to the institutional Program port operations are required for general research and development; therefore, this PE is appropriate for	Systems Tes service HEL test range, a orts testing o I Laser (MIR ting. The rei	t Facility (Foresearch an thully integrated for flaser effect (ACL) will the maining mis and develop	HELSTF): ' id developm ated laser su ts at any pov be terminate sion will tra ment; there!	The HELSTI ent and dament and dament poort facility wer level aga d. The Army mistion to the fore, this PE	F provides a age, vulnera y, an extensi ninst any type y will begin e institutions is appropria	broad oility, and ve array of of target, all Program te for
FY 1995 Accomplishments:	hments: Performed required site operations and maintenance activities. Provided Support to HEL testing to include follow on to Navy/United Kingdom Point Defense Demonstration, the Air Force Airborne Laser Program plus other smaller experiments. Supported Nautilus Program.	tions and ma ing to includ s.	intenance ac e follow on	tivities. to Navy/Un	ited Kingdor	n Point Defe	inse Demoni	stration, the	Air Force Ai	irborne Lase	r Program
FY 1996 Planned Program:	rogram: Perform required site operations and maintenance activities. Joint US/Israeli Nautilus Program Joint US/Israeli Tactical High Energy Laser (THEL) Program. SBIR/STTR. Revised Economic Assumption not available for execution.	ons and main gram 1 Energy Lase on not availal	tenance acti er (THEL) F ble for execu	vities. rogram. ıtion.							

Project DE97

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LION SHEET		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605605A DOD H Facility (HELSTF)	DTITLE DOD High Energy Laser System Test ELSTF)	PROJECT IEST DE97
FY 1997 Planned Program: • 2967 Provide funding to perform required site operations and maintenance activities to maintain laser system testing infrastructure. Total 2967	d maintenance activiti	es to maintain laser system testing infrastr	ucture.
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to EV 1005	5 FY 1996 4 3000 1	FY 1997 0	
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	34388 -345	+2967	
Current President's Budget Submit	34043	2967	
Change Summary Explanation: Funding: FY 1996: A portion of this program has been reduced for an amount which reflects revised economic assumptions.	int which reflects revis	ed economic assumptions.	
Project DE97	Page 2 of 2 Pages	Exhibit	Exhibit R-2 (PE 0605605A)
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SH	IEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE M	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605606A Aircr	E NUMBER AND TITLE 1605606A Aircraft Certification	ertificati	uo		<u>a</u> O	РRОЈЕСТ D092
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D092 Aircraft Certification	0	2894	2905	2901	2898	2929	2976		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Performs all engineering functions essential for certifying the airworthiness of assigned Army aircraft. Performs future system/subsystems. Manages the test and evaluation process to support the airworthiness qualification of developmental and fielded aircraft systems. This project funds activities required for general research and development on support of aircraft certification. Since these activities are not allocable to specific R&D missions, this Program Executive Office and the Army Aviation and Troop Command Program/Project/Product Manager requirements for major development/modification and any qualification/testing on fielded aircraft and materiel changes for all assigned Army aircraft systems. Provides airworthiness engineering support to the Army Aviation safety-of-flight investigations/assessments and issues messages to the field. Manages/executes the Army's Aeronautical Design Standards (ADS) Program; ADS is a continuously evolving process incorporating revisions for each change to the standard design of an aircraft system. Manages airworthiness approval of new vendor project is appropriately funded in Budget Activity 6.

FY 1995 Accomplishments: See PE 0605604A, Project D089. Project restructured to PE 0605606A in FY 1996.

FY 1996 Planned Program:

0		
•	748	Manage/execute technical and airworthiness qualification mission for PEO Aviation force modernization aircraft systems
•	865	Continue to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization aircraft systems
•	150	Manage/execute the Army Aeronautical Design Standards Program
•	865	Provide continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems
•	448	Continue to provide test management capability for PEO Aviation program/project/product managers
•	65	Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR)
•	20	Revised Economic Assumption not available for execution
Total	2894	

FY 1997 Planned Program:

• Manage/execute technical and airworthiness qualification mission for PEO Aviation force modernization aircraft systems	 540 Continue to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization aircraft systems 	• Manage/execute the Army Aeronautical Design Standards Program	 1136 Provide continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems 	 390 Continue to provide test management capability for PEO Aviation program/project/product managers 	Total 2905	Project D092 Exhibit R-2 (PE 0605606A)	• • • • • • • • • • • • • • • • • • •	7	Manage/execute technical and airworthiness qualification mission for PEO Aviation force modernization airc Continue to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization a Manage/execute the Army Aeronautical Design Standards Program Provide continuing engineering support for emerging technology upgrades to PEO Aviation force modernizal Continue to provide test management capability for PEO Aviation program/project/product managers Page 1 of 2 Pages
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET	R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605606A Aircr	D TITLE Aircraft Certification	PROJECT D092
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	EY 1996 2976 2924 -30	EY 1997 2984 -79	
Current President's Budget Submit Current President's Budget Submit	2894	2905	
Project D092	Page 2 of 2 Pages		Exhibit R-2 (PE 0605606A)
	1174		

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SE	IEET (R	-2 Exhil	oit)		DATE M	March 1996	တ
800G 6 - 1	вирсет Астіvіту 6 - Management Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605702A Mete Development, T	ntle Teteorolo it, Testin	gical Su g & Evalı	PENUMBER AND TITLE OGO SICAL SUPPORT TO RESEARCH, Development, Testing & Evaluation Activities	Research tivities	۱,	
	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
	Total Program Element (PE) Cost	12242	6480	6484	6420	6640	6623	6788		Continuing	Continuing
D127	D127 Meteorological Support to ARL Activities	4433	0	0	0	0	0	0		0	4433
D128	D128 Meteorological Support to TECOM Activities	7809	6480	6484	6420	6640	6623	6788		Continuing	Continuing Continuing

Mission Description and Budget Item Justification: Provides atmospheric analysis sampling, consultation forecasting, advisory and warning products and test reports to satisfy Army/DoD RDTE support requirements. Provides technical support to Army Program Executive Officers (PEO's), Project Mangers (PM's) and Army test ranges. development efforts directed towards support of installations or operations required for general research and development use, therefore, is appropriate to Budget Activity Develops methodologies and acquires instrumentation/systems that allow meteorological teams to support Army /DoD RDTE requirements. Includes research and

Page 1 of 6 Pages

Exhibit R-2 (PE 0605702A)

1175

RDT&E BUDGET ITEM JUST	Sn NJ.	BERREITE	S	y) Luu	FICATION SHEET (R-2 Exhibit)			DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PEN 060 Dev	PENUMBER AND TITLE 0605702A Mete Development, T	TITLE Reteorolo 1t, Testin	ENUMBER AND TITLE MOSTOZA Meteorological Support to Researd Development, Testing & Evaluation Activities	pport to uation A	ENUMBER AND TITLE D605702A Meteorological Support to Research, Development, Testing & Evaluation Activities		PROJECT D127
COST (In Thousands) FY 1995 F	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to	Total Cost
D127 Meteorological Support to ARL Activities	4433	0	0	0	0	0	0		O	4433

atmospheric information critical in tests of high priority Army weapon and materiel to quantify the efforts of the atmosphere on test articles and to assist in the analysis of required modifications to weapon and materiel. Provides automated surface and upper air meteorological data acquisition systems to support Army RDT&E activities. A. Mission Description and Budget Item Justification: Project D127 - Meteorological Support to Army Research Laboratory Activities (ARL): Provides Effective FY 96, this effort is funded in PE 0605604A, Survivability/Lethality Analysis.

FY 1995 Accomplishments:

9	406	Assessed and validated acoustic propagation model for determining atmospheric effects on long-range acoustic propagation.
•	1094	094 Completed operational smoke cloud tomography technique, enhance data collection and analysis techniques and provided field test support.
•	586	Characterized diurnal evolution of planetary boundary layer with application to acoustic and electromagnetic propagation and aerosol transport.
6	406	Developed interoperability of battlefield weather intelligence software with Army Tactical Command and Control System, Louisiana Maneuvers and
		TRADOC Battle Labs.
•	904	Related measurements of atmospheric diffusion coefficients above the Planetary Boundary Layer to laboratory quality upper atmospheric soundings,
		for missile intercept studies.
8	496	Completed validation and model acceptance for time-variable transport and diffusion model.
•	406	Assessed technique to exploit spectral and spatial contrast divergence for long-range target acquisition.
•	135	Developed a portable high-resolution spectroscopic system for characterization of chemical agents, obscurants and rocket plumes.
Total 4	4433	

FY 1996 Planned Program: Project restructured to PE 0605604A, Survivability/Lethality Analysis.

FY 1997 Planned Program: Project restructured to PE 0605604A, Survivability/Lethality Analysis.

Project D127

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION	SHEET (R-2 Exhibit)	DATE March 1996	1996
вирсет АСТІVІТУ 6 - Management Support		PE NUMBER AND TITLE 0605702A Mete Development, T	PE NUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	rt to Research, on Activities	PROJECT D127
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget vear (FY 1997) since	<u>FY 1995</u> 4489 4449 -16	FY 1996 0	FY 1997 0	,	
FY 1996 President's Budget Current President's Budget Submit	4433	0	0		
Project D127	Page	Page 3 of 6 Pages		Exhibit R-2 (PE 0605702A)	(A)
		1177			

to and the last version of the last transfer and tra		RDT&E BUDGET ITEM JUST			0 2 0		FICATION SHEET (R-2 Exhibit)			DATE	March 1996	60
BUDGET ACTIVITY 6 - Managen	TWITY agemen	вироет Астіvity 6 - Management Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605702A Mete Development, T	oe number and title 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	gical Sug g & Eval	sport to l	Research tivities	e participation de la company de la comp	PROJECT D128
To a charge this property of the charge of t	Ö	COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D128 Met	eorological S	Meteorological Support to TECOM Activities	7809	6480	6484	6420	6640	6623	6788	er energi se en energia en esta en	Continuing	Continuing
A. Mission II standard and standard and standspheric a ballistic meter ballistic tests, products such simulated nuc the Army test requirements.	n Descript nd specialisic analysis eteorologic sts, special uch as go-i nuclear ble test ranges	A. Mission Description and Budget Item Justification: Project D128 - Meteorological Support to Test and Evaluation Command (TECOM) Activities: Provides standard and specialized weather forecasts and data for test reports to satisfy Army/DoD RTD&E-unique test requirements for modern weaponry, i.e., (1) Unique atmospheric analysis sampling to include atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, ballistic meteorological measurements, snow characterization and crystal structure; (2) Unique consultation forecasting to include prediction of sound propagation for ballistic tests, specialized prediction of light level and target to background predictions for electro optical testing and ballistic meteorology; (3) Advisory and warning products such as go-no-go advisories for ballistic and atmospheric probe missiles, smoke obscurant tests, hazard predictions for chemical agent munitions disposal, simulated nuclear blasts, and weather warnings for range/test safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs) and the Army test ranges. Develops methodologies and acquires instrumentation/systems that allow meteorological teams to support current and future Army/DoD RDTE requirements.	ation: Proje for test reportic transmitta sterization an and target to b and atmospher range/test saf acquires inst	ct D128 - Ives to satisfy nee, extinction of crystal strackground price probe misery. Provider, rumentation	feteorologic Army/DoD ion, optical s ucture; (2) U vedictions fo ssiles, smoke es technical	cal Support RTD&E-un scintillation, Unique cons or electro op obscurant t support to A at allow me	to satisfy Army/DoD RTD&E-unique test requirements for modern weaponry, i.e., (1) Unique to satisfy Army/DoD RTD&E-unique test requirements for modern weaponry, i.e., (1) Unique to satisfy Army/DoD RTD&E-unique test requirements for modern weaponry, i.e., (1) Unique correction, infrared temperature, aerosol/smoke cloud dispersion characteristics, crystal structure; (2) Unique consultation forecasting to include prediction of sound propagation for kground predictions for electro optical testing and ballistic meteorology; (3) Advisory and warning probe missiles, smoke obscurant tests, hazard predictions for chemical agent munitions disposal, provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs) and mentation/systems that allow meteorological teams to support current and future Army/DoD RDTE imentation/systems that allow meteorological control of the control	Evaluation irrements for perature, aer sasting to inc and ballistic predictions for m Executive (teams to supplements)	Command modern we osol/smoke lude predict meteorology or chemical Officers (PE	(TECOM) aponry, i.e., cloud disper ion of sounc iy; (3) Advis agent munit (0s), Project and future A	Activities: P. (1) Unique sion charact propagation ory and warrions disposa (Managers (Army/DoD R	ovides ristics, for ing Ms) and DTE
FY 1995.	FY 1995 Accomplishments: • 5494 Provide of all A	hments: Provided specialized weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of all Army/DoD tests and projects at 12 Army test sites/ranges as per para A above, and as safari to off range test sites. Modernized operational equipment to meet customer requirements for meteorological support. - Upgraded Surface Automated Meteorological Systems (SAMS) to once a second sampling data rate to meet the higher data rates and specialized	forecasts, se ojects at 12 / pment to mee ed Meteorolc	vere weathe Army test sit st customer i gical Syster	r warnings/a es/ranges as requirement ns (SAMS)	advisories, state para A stor meteorito once a sec	re weather warnings/advisories, staff meteorological services, and atmospheric measurements in supporty test sites/ranges as per para A above, and as safari to off range test sites. customer requirements for meteorological support. ical Systems (SAMS) to once a second sampling data rate to meet the higher data rates and specialized sart, weapons	ogical servic s safari to off oort. ig data rate to	es, and atmo frange test s meet the h	ospheric mes iites. igher data ra	asurements in	ı support alized
•	480	measurements requirements of the new small waspens. - Fielded Mobile Operational Meteorological Support (MOMSS) to support tests off range or at primitive sites. - Tested operational Global Positioning System (GPS) upper air system that provides a ten-fold increase in spatial and temporal accuracy's from previous upper air measurement systems. - Installed 11 GPS based upper air systems at Major Range Test Facility Bases (MRTFB). - Provided program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams. - Evaluated the Joint DoD/National Weather Service Program "Next Generation Doppler Weather Radar" (NEXRAD) remote display system at WSMR, for possible use at several ranges.	Inches so Inches so Inches so Inches so Inches Societioning Steems her air system ent for meteo ational Weatl everal ranges	inat weap ical Support ystem (GPS) s at Major rological su ner Service I	(MOMSS)) upper air s; Range Test pport to RD' Program "N	to support tystem that p Facility Bar TE and tech ext Generati	rovides a ten rovides a ten ses (MRTFB nical review/ on Doppler V	fold increas. fold increas. assistance to Weather Radi	ive sites. e in spatial aranges and ar" (NEXR/	and tempora meteorologi AD) remote	l accuracy's ical teams.	from m at
•	50	 Evaluated the prototype Automated Weather System, of the National Weather Service (NWS). Plan to acquire operational Version of this NWS service as replacement for current, contracted, weather data services in the outyears. Upgraded the ADPE of the Meteorological Interactive Data Display System (MIDDS) to support WSMR's Meteorological Team with near-real-ti satellite imagery. 	ntomated Wer irrent, contra Meteorologic	ather Systen cted, weathe al Interactiv	ı, of the Nat sr data servic e Data Displ	ional Weath ces in the ou lay System (ner System, of the National Weather Service (NWS). Plan to acquire operational version of this INWS ed, weather data services in the outyears. Interactive Data Display System (MIDDS) to support WSMR's Meteorological Team with near-real-time	IWS). Plan i upport WSM	o acquire o fR's Meteor	perational v ological Tea	ersion or unis am with near	n w s real-time
Total	7809				Page 4	Page 4 of 6 Pages			Expi	bit R-2 (PE	Exhibit R-2 (PE 0605702A)	
Project D128)128		1 NY, NY SELECTION OF SELECTION OF SELECTION OF	tigles price of a musical section of the section of	rake 4 0	7 0 1 ages			The second secon			A CONTRACTOR OF THE PROPERTY O





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Managen	nent Support	PENUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	PROJECT Research, D128 ctivities
FY 1996 Planned Program: • 4535 Provide and pro	ned Program: 4535 Provide weather forecasts, severe weather/advisories, staff meteorological services, and atmospheric measurements in support of all Army/DoD tests and projects at 11 Army test sites/ranges and as safari to off range test sites. (Site at Jefferson Proving Ground closed due to BRAC action.)	steorological services, and atmospheric measurements ange test sites. (Site at Jefferson Proving Ground close	in support of all Army/DoD tests ed due to BRAC action.)
•	 1140 Modernize operational equipment to meet customer requirements for meteorological support. Phase III (last) upgrade of SAMS to increase data transmission rates, and data reduction and analysis. Electro-optical Instrumentation. Sustainment of mobile systems. Validate atmospheric profilers 	ents for meteorological support. ion rates, and data reduction and analysis.	
•	 755 Provide program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams. - Weather forecast support systems/data. - Install 3 National Weather Service "Next Generation Doppler Weather Radar" (NEXRAD) principal user processors at Redstone, WSMR. and Aberdeen Proving Ground. 	RDTE and technical review/assistance to ranges and mer Weather Radar" (NEXRAD) principal user processon	eteorological teams. ors at Redstone, WSMR. and
• Total 6	50 Revised Economic Assumption not available for execution 6480		
FY 1997 Planned Program: • 4704 Provide Army/J	ned Program: 4704 Provide weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of all Army test sites/ranges and as safari to off range test sites.	s, staff meteorological services, and atmospheric meas l as safari to off range test sites.	urements in support of all
•	1180 Modernize operational equipment to meet customer requirements for meteorological support. - Electro-optical Instrumentation. - Sustainment of mobile systems.	ents for meteorological support.	
•	 GPS upgrades to upper air systems. Install atmospheric profilers Provide program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams. Weather forecast support systems/data. Staff/technical assistance. MRTFB "4D" Weather System 	RDTE and technical review/assistance to ranges and m	eteorological teams.
Total	6484		
Project D128	Page	Page 5 of 6 Pages Exhib	Exhibit R-2 (PE 0605702A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		engelstinssom sammertieterine andersammer andersammer.	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605702A Mete Development. T	DE NUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	esearch, D128 ivities
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget		FY 1991 6486 -2	
Current President's Budget Submit 7809	6480	6484	
Project D128	Page 6 of 6 Pages	Exhibit	Exhibit R-2 (PE 0605702A)
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	FIFICATION SHEET (R-2 Exhibit)	łeet (R	-2 Exhil	oit)		DATE M	March 1996	ပ္
BUDGET ACTIVITY 6 - Management Support			PE NU 0 90	PE NUMBER AND TITLE 0605706A Mate	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	ystems /	Analysis			
COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	18769	17382	14428	14284	14453	14026	14409		Continuing	Continuing Continuing
D026 Test Design and Evaluation	5881	5254	4258	4168	4359	4443	4560		Continuing	Continuing
M541 Materiel Systems Analysis	12888	12128	10170	10116	10094	9583	9849		Continuing	Continuing

AMSAA responds to analyses required by the AAE, Program Executive Officer/Project Manager (PEO/PM), and other decision makers of the Army and the Department of Defense. These projects fund efforts in support of operations required for general research and development and, since they are not allocable to specific R&D missions, are independent evaluation of major systems, provides the technical capability for the conduct of materiel systems analysis. AMSAA evaluates the performance and combat AMSAA is the Army's technical evaluator of concept/technology demonstrations, developmental systems, and production tests for all major Defense Acquisition Board, Director Operational Test and Evaluation, and Department of the Army oversight systems, including special access programs. AMSAA provides technical independent performance assessments (which include performance analyses, risk assessments and Reliability, Availability, and Maintainability assessments) in support of milestone logistics, etc. AMSAA has a lead role in the planning and execution of the Army live fire tests through its test design, analysis and evaluation responsibilities. As such, developmental, and production tests to address factors pertinent to the decision process such as: technical maturity, technical risk, technical performance, producibility, operational effectiveness analyses, force structure studies, risk analyses, trade-off and casualty assessment criteria. AMSAA is the HQDA designated lead agency for Mission Description and Budget Item Justification. The U.S. Army Materiel Systems Analysis Activity (AMSAA), as the Army's center for systems analysis and evaluations for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive (AAE). AMSAA designs technical, acquisition decisions. AMSAA supports the Army in the development of methodologies, models, simulations, and data bases for use in Army studies and analyses. effectiveness of existing, developmental and conceptual systems to support Department of the Army and other major Army commands in the conduct of cost and appropriately funded in Budget Activity 6.

Page 1 of 5 Pages

RDT&E BUDGET ITEM JUST			SON		FICATION SHEET (R-2 Exhibit)		- instruction	DATE	March 1996	(O
BUDGET ACTIVITY		anno control de la la control de la control	PE N	PE NUMBER AND TITLE	TTLE				PI	PROJECT
6 - Management Support			090	5706A N	0605706A Materiel Systems Analysis	ystems /	Analysis			0026
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D026 Test Design and Evaluation	5881	5254		4168	4359	4443	4560		Continuing	Continuing Continuing

minimize program impacts at milestone reviews. This project funds the salaries of civilian employees assigned to the test design and evaluation mission. This project does improvement test design and evaluation for Army technical testing in support of major programs. Test design and evaluation is performed independently of the PEO/PM, concept/technology assessments. Regular system assessments are provided to the AAE between major milestones to highlight emerging issues which can be resolved to A. Mission Description and Budget Item Justification: Project D026 provides for technology/concept demonstration, developmental, production and product materiel development command and the testing agencies to complement operational test and evaluation results for the Army acquisition decision process and not finance test facilities, test instrumentation or test equipment.

FY 1995 Accomplishment:

3802	3802 Provided test design and evaluation support for 76 systems in development, undergoing major materiel change, or recently fielded. Reduction in
	systems from prior year can be attributed to selected lower priority/effort ACAT III and IV systems which represent very small cost savings. System
	evaluations supported 17 program milestone decision reviews during FY 1995. Examples of evaluations in support of AAE decision include: 155-
	mm Sense and Destroy Armor Munitions; Forward Air Defense Command, Control and Intelligence Ground Based Sensor; Hellfire-Millimeter Wave;
	Joint Surveillance Target Acquisition System Light Ground Station Module; Joint Tactical Information Distribution System; Joint Unmanned Aerial
	Vehicle - Short Range; Secure, Mobile, Anti-Jam Reliable Tactical-Terminal; Single Channel, Anti-Jam Manportable; and Wide Area Mine.
	Evaluated the results of seven live fire tests.
2079	2079 Developed test design and evaluation plans for developmental tests to be conducted FY 1996 - FY 2000. This effort included test design and

FY 1996 Planned Program:

5881

Total

evaluation planning for systems to undergo live fire testing in FY 96-97.

- decisions/DA IPRs include: Bradley Upgrades, Sense and Destroy Armor, Command and Control Vehicle, All Source Analysis System, Advanced Provide test design and evaluation support for systems that are either in development, undergoing major materiel change programs or have been recently fielded. System evaluations will support program milestone decision reviews during FY 96. Examples of evaluations support of AAE Field Artillery Tactical Data System, and the Abrams Battlefield Combat Identification System.
 - evaluation planning for systems projected to undergo live fire testing in FY97-98. Early planning and analysis assures the early identification of requirements for long lead procurement of experimental/prototype equipment or test instrumentation and the integration of developmental and Develop test design and evaluation plans for developmental tests to be conducted in FY97 through FY 01. This effort includes test design and operational evaluations to support accelerated acquisition and technology transition programs. 1798

Project D026

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605706A Mate	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	PROJECT D026
FY 1996 Planned P 20 • 40 Total 5254	FY 1996 Planned Program: (continued) 20 Small Business Innovation Research (SBIR)/Small Busines 40 Revised Economic Assumption not available for execution Total 5254	R)/Small Business Technology Transfer (STTR)	nsfer (STTR)	,
FY 1997 Planned Program:	test design and evaluation for systichange/technology insertion. Sytof AAE decisions/DA IPRs inclute, Enhanced Position Location and prest design and evaluation plans ion planning for systems projected ments for long lead procurement on all evaluations to support accelered funding will focus test design arments integrating developmental and the statement of the	iechnologies that are is will support progray Tactical Missile Sem, Armored Gun Satal tests to be conducted from the fire testing in FY9 prototype equipmentand technology traission on ACAT I arest and evaluation pression	tems/concepts/technologies that are either in demonstration/development phases or unde stem evaluations will support program milestone decision reviews during FY97. Examp de: Javelin, Army Tactical Missile System - Blocks IA and II, Extended Range Multiple Reporting System, Armored Gun System, and the Wide Area Mine System. for developmental tests to be conducted in FY98 through FY 02. This effort includes test to undergo live fire testing in FY98-99. Early planning and analysis assures the early ic fexperimental/prototype equipment or test instrumentation and the integration of develoated acquisition and technology transition programs. Indevelopment and evaluation processes will create efficiencies to manage priority pind operational test and evaluation processes will create efficiencies to	ergoing major ples of evaluations in Launch Rocket sst design and identification of opmental and orograms. Functional
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	Summary FY 1995 Budget (FY 1996) 6027 nt (FY 1995) 5906	EY 1996 5399	FX 1997 4260	
Adjustments to Fx 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996		5305 -51	4260	
Adjustment to Budget Year (FY 19 President's Budget Current President's Budget Submit	Adjustment to Budget Year (FY 1997) since FY 1990 President's Budget Current President's Budget Submit	5254	4258	
Project D026		Page 3 of 5 Pages	Exhibit R-2 (PE 0605706A)	605706A)

RDT&E BUDGET ITEM JUST	EN JUS	S		IFICATION SHEET (R-2 Exhibit)	2 Exhi			DATE	March 1996	ග
BUDGET ACTIVITY 6 - Management Support			PENI 060	PENUMBER AND TITLE 0605706A Materiel Systems Analysis	ritle Nateriel S	ystems	Analysis			PROJECT W541
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M541 Materiel Systems Analysis	12888	12128	10170	10116	10094	9583	9849		Continuing Continuing	Continuing

conceptual systems in support of Headquarters, Department of the Army (HQDA), Army Materiel Command (AMC), Program Executive Officers (PEOs), Project Managers systems. At the direction of the Deputy Under Secretary of the Army for Operations Research, AMSAA certifies the performance data provided for major Army studies to request for proposals. AMSAA is the HQDA designated lead agency for performance assessments in support of milestone acquisition decisions. This project includes the efforts to develop analytical methodologies to characterize the performance of new technologies associated with weapons, smart munitions, sensors, and command control provide confidence in study results and assure a sound basis for acquisition decisions. This project funds the salaries of civilian employees assigned to the materiel system (PMs), and research and development (R&D) centers to provide a basis for developing acquisition strategies, concept definitions, operational requirement documents and A. Mission Description and Budget Item Justification: Project M541 funds the Army Materiel Systems Analysis Activity (AMSAA) primary mission of independent systems analysis and effectiveness evaluations for major materiel systems. AMSAA evaluates the performance and combat effectiveness of existing developmental and analysis mission.

FY 1995 Accomplishments:

9	809	Develop and certify system performance data for U.S. and foreign systems to support Army Cost and Operational Effectiveness Analysis (COEAs),
		force structure studies and theater level studies. Examples of COEAs to be supported include: Joint Unmanned Aerial Vehicle - Short Range,
		Battlefield Combat Identification System Theater High Altitude Area Defense and ground Based Radar for Theater Missile Defense.
•	10675	Provide analysis of performance and combat effectiveness of materiel systems and technology base programs in support of HQDA, AMC, PEOS/PMs
والمراكبة المراجعة		and R&D Centers. Included are technical risk, trade-off and requirements analyses. Initial projections identified a potential requirement to provide
		analytical support for 144 systems/programs and 16 Distributed Interactive Simulator projects.
•	1605	Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of
0.000000		scenarios and conditions for support of force-on-force analyses and war games.
Total	12888	

FY 1996 Planned Program:

\$\$	566 Develop and certify system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater
	level studies.
9938	8 Provide analyses of performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/PMs and
	R&D Centers. Included are performance analyses, risk assessments, and reliability, availability, and maintainability assessments for HQDA in support
	of milestone acquisition decisions. Provide performance data and analytic support for Advanced Technology Demonstrations, Distributed
	Interactive Simulation projects and Advanced Warfighting Experiments supporting Force XXI.

Project M541

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhibit)	E March 1996
вирбет астіміту 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605706A Mate	PE NUMBER AND TITLE OGO STOCK Materiel Systems Analysis	PROJECT M541
FY 1996 Planned P 1494 37 Total 12128	 FY 1996 Planned Program: (continued) 1494 Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs supporting Force XXI. Will perform a validation and accreditation of algorithms portraying physical representation of systems in Distributed Interactive Simulations to support the TRADOC Battle Labs and Study Centers. 37 SBIR/STTR 93 Revised Economic Assumption not available for execution Total 12128 	performance and combat effective ce-on-force analyses and for virtual accreditation of algorithms portray le Labs and Study Centers.	e performance and combat effectiveness of conceptual, developmental, and fielded systems in a varice-on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs suplaced accreditation of algorithms portraying physical representation of systems in Distributed Interactive le Labs and Study Centers.	lded systems in a variety of bs/ACTDs/AWEs supporting bistributed Interactive
FY 1997 Planned Program:	rogram: Develop and certify system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater level studies. Provide analyses of performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are performance analyses, risk assessments, and reliability, availability, and maintainability assessments for HQDA in support of milestone acquisition decisions. Provide performance data and analytic support for Advanced Technology Demonstrations, Distributed Interactive Simulation projects, and Advanced Warfighting Experiments supporting Force XXI. Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs supporting Force XXI. Will perform validation and accreditation of algorithms portraying physical representation of systems in Distributed Interactive Simulations to support the TRADOC Battle Labs and Study Centers.	and foreign systems to neess of materiel system k assessments, and relistformance data and ansthing Experiments suppose and combat effective analyses and for virtual of algorithms portrayinstudy Centers.	be used to support Army COEAs, force st s and tech base programs in support of HC ability, availability, and maintainability as lytic support for Advanced Technology I orting Force XXI. ness of conceptual, developmental, and field and constructive simulations used in ATI g physical representation of systems in Di	ucture studies and theater DA, AMC, PEOs/ PMs and essments for HQDA in emonstrations, Distributed lded systems in a variety of bs/ACTDs/AWEs supporting stributed Interactive
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997)	EX 1. 12. 12. 12. 12. 12. 12. 12. 12. 12.	995 FY 1996 944 12465 944 -56 12247	FY 1997 10174 10174 -4	
Current President's Budget Submit	Budget Submit 12888	38 12128 Dans 5 of 5 Pages	10170 Exhibit R	Exhibit R-2 (PE 0605706A)
Project M341		1185		

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BUDGET ACTIVITY	energy a conversion and energy and historical and his	and completely and co	PEN	PE NUMBER AND TITLE	TTE			THE THE PARTY OF T	The state of the s	
6 - Management Support			090	5709A E	xploitati	0605709A Exploitation of Foreign Items	eign Iten	S		en green provinces (A)
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	12391	8627	7347	7757	7638	11644	10863		Continuing	Continuing
D650 Exploitation of Foreign Items	3778	3398	3304	3328	3289	3320	2609		Continuing	Continuing Continuing
DC28 Acquisition/Exploitation of Threat Items	8613	5229	4043	4429	4349	8324	8254		Continuing	Continuing Continuing
	Language and the second of the second	A CONTRACTOR OF THE PROPERTY OF THE PARTY OF	A STATE OF THE PROPERTY OF THE	And the state of the best of the state of th	The second section of the second seco	Appropriate the second	STOCK OF A STATE OF THE STATE O			

systems by analyzing innovations and technology in foreign materiel, and to make research and development more efficient by reducing uncertainties concerning potential training. These projects fund foreign materiel acquisitions and exploitations in support of the U.S. Army Testing, Training and Intelligence programs required for general research and development and, since they are not allocable to specific R&D missions, are appropriately funded in Budget activity 6. force. This program enables the Army to conserve research and development funds and man-hours, enhance and improve U.S. designs, and provide realistic testing and advanced technology threats to U.S. systems. The program also serves to develop counter measures and to support operational commanders with items for training the development, scientific and technical intelligence needs, operations and training. Primary program objectives are to reduce research and development times for U.S. Mission Description and Budget Item Justification: This is a continuing project for acquisition and exploitation of foreign materiel to support force and materiel

Page 1 of 5 Pages





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	ION S	L EET (R	IIFICATION SHEET (R-2 Exhibit)	oit)		DATE MA	March 1996	6
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605709A Explo	птге :xploitatic	on of For	E NUMBER AND TITLE 3605709A Exploitation of Foreign Items	<u>න</u>	a ()	РRОЈЕСТ D650
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D650 Exploitation of Foreign Items	3778	3398	3304	3328	3289	3320	2609		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project D650 - Exploitation/Evaluation of Foreign Items: This project affords the Army's Research and Development (R&D) Community an opportunity to acquire and exploit/evaluate worldwide leading edge technologies. This exploitation/evaluation of foreign technological capabilities is in order to prevent technological surprise, eliminate or compress the R&D time cycle, contribute to R&D cost avoidance, enhance U.S. system and program designs, and to explore Non-Developmental items.

FY 1995 Accomplishments:

•	1100	1100 Continue on-going project evaluations and exploitations identified prior to FY 95.
•	1750	New start FY 95 acquisitions of 30 projects.
•	876	New start FY 95 evaluations and exploitations of foreign materiel and/or technologies
Total	3778	

FY 1996 Planned Program:

70 tale		Plan new start FY 96 acquisitions of 25 projects.	Plan new start FY 96 evaluations and exploitations of foreign materiel and/or technologies	SBIR/STTR	Revised Economic Assumption not available for execution.	
	1300	1203	812	73	10	3398
1	•	•	•	•	•	Total

FY 1997 Planned Program:

• 804 Plan new start FY97 evaluations and exploitations of foreign material and/or technology	L 177/ Liamen Libraini	Continue on-going project evaluations and exploitations identified prior to FY97. Plan new start FY97 acquisitions of 23 projects. Plan new start FY97 evaluations and exploitations of foreign materiel and/or technologie	1300 1200 804	
	• 1300 Continue on-going project evaluations and exploitations identified prior to FY97.) Plan new start FY97 acquisitions of 23 projects.	120(•
• 1200 Plan new start FY97 acquisitions of 23 projects.		 Continue on-going project evaluations and exploitations identified prior to FY91. 	130(•

Project D650

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605709A Expl	D TITLE Exploitation of Foreign Items	PROJECT D650
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)	EX 1	<u>57 1997</u> 3390	
Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	-34	-86	
FY 1996 President's Budget Submit Current President's Budget Submit	3398	3304	
Project D650	Page 3 of 5 Pages		Exhibit R-2 (PE 0605709A)
	1188		





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	oit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605709A Exploitation of Foreign Items	пте xploitati	on of For	eign Iten	JS	<u>م</u>	PROJECT DC28
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC28 Acquisition/Exploitation of Threat items	8613	5229	4043	4429	4349	8324	8254		Continuing	Continuing Continuing

exploitation of foreign materiel constituting potential advanced technology threats to U.S. systems. The primary aim of this project is to maximize the efficiency of research Acquisition s and exploitations are executed according to an Army Foreign Materiel Review Board and with the approval of the Army Deputy Chief of Staff for Intelligence intelligence requirements, aids in the development of countermeasures to threat materiel and threat technology, and provides materiel for realistic testing and training and development for force and materiel development by reducing the uncertainties concerning these threats. The project also answers general scientific and technical A. Mission Description and Budget Item Justification: Project DC28 - Acquisition/Exploitation of Threat Items: This is a continuing project for acquisition and (DCSINT)

FY 1995 Accomplishments:

•	2800	Acquire threat systems identified and prioritized in the FY 95 Army Foreign Materiel Program (FMP) Five Year Plan.
•	3856	5 Initiate, continue, or complete exploitation projects on ground systems of Army Interest identified in the FY 95 Army FMP Exploitation Plan.
•	1957	Initiate, continue, or complete exploitation projects on missile systems of Army Interest identified in the FY 95 Army FMP Exploitation Plan.
Total 8	8613	

FY 1996 Planned Program:

•	1000	1000 Acquire threat systems identified and prioritized in the FY 96 Army Foreign Materiel Program (FMP) Five Year Plan.
•	2722	2722 Initiate, continue, or complete exploitation projects on ground systems of Army Interest identified in the FY 96 Army FMP Exploitation Plan.
•	1376	1376 Initiate, continue, or complete exploitation projects on missile systems of Army Interest identified in the FY 96 Army FMP Exploitation Plan.
•	117	SBIR/STTR
•	14	Revised Economic Assumption not available for execution.
Total	5229	

FY 1997 Planned Program:

•	800	Acquire threat systems identified and prioritized in the FY97 Army Foreign Materiel Program (FMP) Five Year Plan.
•	2192	Initiate, continue, or complete exploitation projects on ground systems of Army Interest identitied in the FY97 Army FMP Exploitation Plan.
•	1051	Initiate, continue, or complete exploitation projects on missile systems of Army Interest identified in the FY97 Army FMP Exploitation Plan.
Total	4043	

Project DC28

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATIO		(R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0505709A Explo	ID TITLE Exploitation of Foreign Items	
Y 1996) 5) 6) Y 1997) since	FY 1995 8011 8011 +602	FX 1996 5376 5282 -53	EX 1997 4151 -108	,
FY 1996 President's Budget Submit Current President's Budget Submit	8613	5229	4043	
Project DC28	P_{ϵ}	Page 5 of 5 Pages		Exhibit R-2 (PE 0605709A)
		1190		





RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhi	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605712A Supp	TITLE Support o	f Operati	PE NUMBER AND TITLE 0605712A Support of Operational Testing	ting		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	30543	45180	50906	59395	49834	47617	48767		Continuing	Continuing
DV02 Test Directorates	15251	14851	14944	15318	15861	15022	15333		Continuing	Continuing
D001 OPTEC IOTE	6231	16937	21021	22078	18224	15783	16602		Continuing	Continuing
D985 Concepts Evaluation of Material	5862	7390	10545	16776	10551	10522	10436		Continuing	Continuing
D987 OPTEC instrumentation Sustainment & Development	3199	6002	4396	5223	5198	6290	6396		Continuing	Continuing

support of operations required for use in general research and development (R&D). The FY 97 increase is essential for testing high priority weapon systems and support to Mission Description and Budget Item Justification: This program finances the operational testing of developmental materiel systems. Its efforts are directed toward the battle lab minor Advanced Warfighter Experiments (AWEs). Program growth reflects increased emphasis on accelerated acquisition methods. Program is also a first look at emerging technologies that have the potential to support the Army's Force XXI design needs. Project D987 provides for development and acquisition of non-major and sustaining instrumentation necessary to attain and maintain the data collection and analysis capability to conduct credible and robust operational tests as demanded by the Projects selected for funding are relatively low cost conceptual evaluations, with high potential for warfighting return on investment. Program provides direct support to Category (ACAT I) major weapons systems is programmed within the PE funding development for each system. Project D985 enables US Army Training and Doctrine battle lab minor Advanced Warfighter Experiments (AWEs). Project DV02 provides for the recurring costs of operating the test activities of the U.S. Army Operational Test and Evaluation Command (OPTEC). Project D001 provides for the direct operational test costs incurred by OPTEC. Starting in FY 1995, funding for Acquisition Command (TRADOC) battle labs and schools to evaluate emerging technologies and other equipment to help define Army mission needs and operational requirements. DoD and Congress. It provides for replacement and improvements of existing obsolete inventory and for the development of new technologies to keep abreast of new weapon advancements. These projects fund operational testing and concept evaluation of materiel in support of the Army and DoD general research and development. Since they are not allocable to specific R&D missions, they are appropriately funded in Budget Activity 6.

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Exhibit R-2 (PE 0605712A)

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RDT&E BUDGET ITEM JUST		LCA			IFICATION SHEET (R-2 Exhibit)			DATE M	March 1996	ဖ
BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	ITLE				Ь	PROJECT
6 - Management Support			090	5712A S	0605712A Support of Operational Testing	f Operat	ional Tes	ting		DV02
COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DV02 Test Directorates	15251	14851	14944	15318	15861	15022	15333		Continuing	Continuing Continuing

Directorate, Fort Huachuca, AZ. The following test directorates are located at Fort Hood, TX: Aviation; Close Combat; Engineer/Combat Support; Command, Control, and Communications. The primary mission of these test directorates is to conduct operational testing of developmental materiel and force development test and experimentation contracts, temporary duty, supplies and equipment of subordinate elements of the Test and Experimentation Command (TEXCOM): Airborne and Special Operations Test (FDTE). Between FY 1990 and FY 1995, Test and Evaluation manpower has been reduced 57%. Further reductions are phased consistent with test scheduling and facility Directorate, Fort Bragg, NC; Air Defense Test Directorate, Fort Bliss, TX; Fire Support Test Directorate, Fort Sill, OK; and the Intelligence and Electronic Warfare Test A. Mission Description and Budget Item Justification: Project DV02 - Test Directorates: This project finances the recurring costs, including civilian pay, support availability. Ultimately, OPTEC test directorates will ramp down from 256 civilian spaces in FY 1995 to 208 spaces by the end of FY 1998.

FY 1995 Accomplishments:

2999 Operational Costs for Fort Bliss, TX Test Directorate	 Operational Costs for Fort Hood, TX Test Directorate Operational Costs for Fort Sill, OK Test Directorate Operational Costs for Fort Huachuca, AZ Test Directorate Operational Costs for Fort Bragg, NC Test Directorate Operational Costs for Fort Bliss, TX Test Directorate 	3931 2400 2836 3085 2999	• • • • 6	
	Operational Costs for Fort Bragg, NC Test Directorate	3085	G	
_	Operational Costs for Fort Huachuca, AZ Test Directorate	2836	•	
	Operational Costs for Fort Sill, OK Test Directorate	2400	•	
	Operational Costs for Fort Hood, TX Test Directorate	3931	9	

FY 1996 Planned Program:

9	3075	Operational Costs for Fort Hood, TX Test Directorate
()	2442	Operational Costs for Fort Sill, OK Test Directorate
9	2969	Operational Costs for Fort Huachuca, AZ Test Directorate
0	3083	Operational Costs for Fort Bragg, NC Test Directorate
9	3093	Operational Costs for Fort Bliss, TX Test Directorate
6	9/	SBIR/STTR
6	113	Revised Economic Assumption not Available for Execution
Total	14851	

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Project DV02







RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (DATE March 1996	9661
вироет Астіміту 6 - Management Support	PE NUMBER AND TITLE 0605712A Supp	PE NUMBER AND TITLE 0605712A Support of Operational Testing	iing	PROJECT DV02
 FY 1997 Planned Program: 4146 Operational Costs for Fort Hood, TX Test Directorates 2331 Operational Costs for Fort Sill, OK Test Directorate 2997 Operational Costs for Fort Huachuca, AZ Test Directorate 2569 Operational Costs for Fort Bragg, NC Test Directorate 2901 Operational Costs for Fort Bliss, TX Test Directorate Total 14944 			,	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)	EX 1996 15263 14996	<u>FY 1997</u> 15024		
97) since	C+11-	-80		
ent's Budget Submit	14021 		Exhibit R-2 (PE 0605712A)	(Y
Project DVV2				

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BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	TLE.		Sauchalan (Saucha)	en in designation of the property of the prope		PROJECT
6 - Management Support			090	15712A S	upport o	f Operati	0605712A Support of Operational Testing	ting		D001
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D001 OPTEC IOTE	6231	16937	21021	22078	18224	15783	16602		Continuing	Continuing Continuing

systems is programmed with the PE funding development of each system. Operational testing is conducted under conditions, as close as possible, to those encountered in testing on major and nonmajor materiel systems (ACAT II-IV), including Multi-Service systems. It funds those costs directly attributable to conducting an early user test A. Mission Description and Budget Item Justification: Project D001 - OPTEC IOTE: This project finances the direct costs of planning and conducting operational and evaluation (EUTE), a limited user test (LUT), or an initial operational test and evaluation (IOTE) on major and nonmajor materiel systems. Operational Test and Evaluation was institutionally funded in this project in FY 1994 and prior years for all Acquisition Categories (ACAT). Effective FY 1995, test funding for ACAT I actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system.

FY 1995 Accomplishments:

- Laser Counter Measures System
- C-17 MIOTE
- Strategic Sealift Program (A)
- Strategic Sealift Program (B)
 - Longbow Apache IOTE
 - AFATDS/ATCCS IV
- AGS EUTE
 - SSP-S PI 945
- Breacher
 - **JTAGS**
- 575 902 974
- AGS IOTE
- **LAFARE IOTE**
 - ASAS Block II

UMARK

- E. TRACKWOLF ST HMMWV 308
 - **IEWCS** 253
 - C2V 195 50
- GBCS LIGHT

Project D001

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Managen	вирсет Астіуіту 6 - Management Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing	PROJECT PROJECT D001
FY 1995 Accon	FY 1995 Accomplishments: (continued) 50 ECV		
•			,
Total 6231	π.		
FY 1996 Planned Program:	1 Program:		
•	175 Complete On-going Operational Testing and Evaluation		
1549	SO AGSIOLE (Sunk Costs) 19 GBCS - LIGHT (IOTE)		
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•	195 IRV		
•	174 AIRTERM/KY - 100		
•	142 SICP LSS		
•	218 AKMS		
Project D001	Pag	Page 5 of 14 Pages	Exhibit R-2 (PE 0605712A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY		PE NUMBER AND TITLE	
6 - Management Support		ort of Operational	Testing D001
FY 1996 Planned	FY 1996 Planned Program: (continued)		des en el en elle aust en en appliet prima, anne en en en en en en en el en el en el en en en entert en en en
460			,
51	SEPS		
• 162	MICAD		
o 1348	EPLRS		
• 82	SSP (A)		
9 378	SBIR/STTR		
	Revised Economic Assumption not available for execution.		
Total 16937			
FV 1997 Planned Program.	rogram.		
0101	ASTAMIDS/IT - IIAV		
06			
25	TWS		
382	SUBD		
281	AKMS		
• 937	FATDS PKG II		
886	GRIZZLY		
993	HAB		
• 640	ASV		
• 1728	AQF IOTE		
• 3510	EPLRS		
285	ATNAVICS		
• 153	GRCS SYS II		
435	ISYSCON		
95	BFIST (XM7) LUT I		
197	LADS		
42	MLRS - IFCS		
• 602	RSCCE		
• 2640	ALCS IV		
734	MILES 2000		
5019	CCTT		
Project D001	Page 6	Page 6 of 14 Pages Exhibi	Exhibit R-2 (PE 0605712A)
And the second s		والمراجعة المراجعة والمستخدمة والمستخدمة والمراجعة والمراجعة والمستخدمة والمستخدمة والمستخدمة والمراجعة والمراجعة	TO THE PROPERTY OF THE PROPERT



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вирсет АСТІVITY 6 - Management Support	PE NUMBER AND TITLE 0605712A Supp	D TITLE Support of Operational Testing	PROJECT ng D001
FY 1997 Planned Program: (continued) Total 21021			,
t (FY 1996) 1995)	FY 1995 FY 1996 7385 17413 6487	FY 1997 21593	
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	17108	-572	
FY 1996 President's Budget Current President's Budget Submit	6231 16937	21021	
Change Summary Explanation Funding: FY 95: 256 decrease attributable to below threshold reprogramming.	reprogramming.		
Project D001	Page 7 of 14 Pages		Exhibit R-2 (PE 0605712A)
	1107		

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RDT&E BUDGET ITEM JUST		TIFICA	TONST	IFICATION SHEET (R-2 Exhibit)	-2 Exhi			DATE	March 1996	6
BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	ITLE				d	PROJECT
6 - Management Support			90	5712A S	orodon	r Operat	0605712A Support of Operational Testing	5		0985
SOO	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D985 Concepts Evaluation of Material	5862	7390	10545	16776	10551	10522	10436		Continuing	Continuing Continuing

Training, Leader Development, Organization, Materiel and Soldiers (DTLOMS) needs. TRADOC battle labs build on initiatives with greatest potential payoff. Program is also used as a first look at emerging technologies that have the potential to support the Army's Force XXI design needs. Advanced Warfighting Experiments (AWEs): As systems domains. They cover all aspects of command and control, lethality, survivability, and tempo and are essential to technology insertion in future Army systems and support to Battle Lab minor Army Warfighting Experiments (AWEs). Program growth reflects increased emphasis on Force XXI initiatives and accelerated acquisition A. Mission Description and Budget Item Justification: Project D985 - Concepts Experimentation Program: The Concepts Experimentation Program (CEP) is a key innovative tool which provides TRADOC battle labs and schools the ability to capitalize on emerging technology and new materiel initiatives. Program provides direct methods. Funds are used to acquire, lease or fabricate equipment to conduct tests and experiments to determine military utility or potential to satisfy Army Doctrine, the Army moves toward Force XXI, the critical task of designing the force around information requires major investment in information-age capabilities. AWEs use constructive, virtual, and live simulations to examine warfighting concepts across doctrine, training, leader development, organizational design, material, and soldier force structure.

FY 1995 Accomplishments:

- Proto Graphic Course of Action Dev Tool
- Mission Plan and Rehearsal
- Integrated Meteorological System
- Communications in Corps Battle Simulation
- Super High Frequency Tri-Band
- C2 Payload Package for High Altitude Endurance
 - Joint Warfare Interoperability Demo 263
- Automated Property Management & Inventory
- Sensor Communications Int Maintenance System 224
 - Hydraulic Excavator/Rock Drill Attach
- **Tactical Automated Teller**
- Small Diesel Engine Driven Generators
- Future Distribution Platform 80
 - Heavy Repair Vehicle
- Contingency Force Recovery Vehicle
- Cobra Evaluation

Project D985

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	hibit) DATE March 1996	96
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AN 0605712A	ס דודוב Support of Operational Testing	РRОЈЕСТ D985
FY 1995 Accomplishments: (continued)	nments: (continued)		
• 199	FAAD Enhancements		
• 429	JANUS Digitization Test Bed		
• 400	Simulation Integration into Proto Class		
• 52	Range Determination for Night Vision		
• 75	Non-Lethal Defense Munitions Technology		
• 146	Night Fighting Training Facility		
• 149	Thermal Signature Training System		
• 89	Backlight Technologies		
• 50	Nightfire Phase II		
• 92	Dismounted Combat ID - Phase I		
• 92	Dismounted Combat ID - Phase II		
. 84	Light Brigade and below TOC Configuration		
• 75	Own the Night		
• 46	Tele Operative Engineer Vehicle		
187	Abrams Fire Control Update		
• 249	Surrogate Dynamic Terrain for CATT		
• 10	Multi Mine Clearing Line Charge Trailer		
• 12	Battlefield Combat Identification System		
110	Helmet Mounted Display		
• 150	Laser Gun Mine Clearing		
• 400	Enroute Communications		
• 480	ACT II Evaluation		
Total 5862			
FY 1996 Planned Program:	rogram:		
98	Military Operations in Built-up Area		
• 500	Modeling in Corps Battle Simulations		
100	Army Company Info System (ARCIS) Interface w/Multi-Tech Automated Keader Card (MARC)	J (MARC)	
107	Generation II Soldier		
• 150	Pointman Sensor Ennancement		
50	Precision Delivery for Remote Wariare		
195	Synthetic Theater of War Diemounted Combat Identification		
C71		Evhihit R.º (PE 0605712A)	
Project D985	Page 9 of 14 Pages		, , , , , , , , , , , , , , , , , , ,

	RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	DATE	7000
				2
BUDGET ACTIVITY 6 - Management Support	it Support	PENUMBERAND TITLE 0605712A Support of Operational	al Testing	PROJECT D985
FY 1996 Planned P	1996 Planned Program: (continued)	on de l'anniennement de les des les les les les les les les les des les les les les les les les les les l		
● 195	Scout Laser Communications			
74	Soldier Power Requirements			
93	Aided Target Recognitions			
• 150	Electronic Warfare (EW) Systems Effectiveness			
26	Joint Surveillance Target Attack Radar System (JSTARS)			
96	Interactive Distributed Early Entry Analysis Simulation/Force Projection Model	rce Projection Model		
350	Direct Broadcast Satellite			
98	Rapidly Installed Breakwater System			
• 240	PLS-E Force XXI Tactical Wheeled Vehicle (TWV) Combat Multiplier	bat Multiplier		
380	Information Operations Situational Awareness			
001	Composite Structure for Robot Engineer			
94	Dismounted Situational Awareness			
• 50	Analytical Applications for Early Entry			
• 42	Tactical Airspace Integration System (TAIS)			
96	Field of View vs. Magnification			
• 255	Force Protection			
96				
• 75	Interest Manager/Reflector for Intelligence, Artillery and A	Artillery and Air Defense Artillery Systems		
19	3rd Generation AN/VSS-2 Driver's Sight for M1A2			
150	Pointman Mine Detection			
86	Non-Lethal Technologies			
210	Lasar Radar Targeting Systems (LATARS)			
91	Fly Ferret			
• 15	Global 24 hour Overhead Surveillance			
• 225	MOS Consolidation			
• 120	Dynamic Intelligence Preparation of the Battlefield (IPB)			
6 549	Signature Reduction Coatings			
• 55	Precision Delivery by Deployable Wing			
986	Early Entry Sustainment Sim/Interfacet			
9 325	Voice Recognition Prototype			
395	Classroom 21 Leadership Development			
310	Prototype Flat Panel Display			
10	Deuce Ripper Tooth			
Project D985	Pag	Page 10 of 14 Pages	Exhibit R-3 (PE 0605712A)	05712A)
A COUNTY OF THE PROPERTY OF TH	,我们也是一个时间,我们就是一个时间,我们也是一个时间,我们也是一个时间,我们也是一个时间,我们也是一个时间,我们也是一个时间,我们也是一个时间,我们也是一个时间			





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R.		DATE March 1996
вирсет Астіvіту 6 - Management Support	PE NUMBER AND TITLE 0605712A SUPP	D TITLE Support of Operational Testing	PROJECT ng D985
FY 1996 Planned Program: (continued) 8	OCAAS 6-DOF) il Aerial Delivery lance & Control Mo apability	dule for Anty Projectile	
FY 1997 Planned Program:	results of the FY 19 Y97 and continue ir	96 Concept Experimentation Program n FY98 and out.	
B. Project Change Summary Previous President's Budget (FY 1996) 5964 Appropriated Amount (FY 1995) 5938 Adjustments to FY 1995	FY 1996 7646	F <u>Y 1997</u> 8977	
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	75 -75	+1568	
Fr 1990 resident's Budget Submit	7390	10545	
Change Summary Explanation: Funding: FY 95: 76 decrease resulted from below threshold reprogramming.	w threshold reprogr	amming.	

Page 11 of 14 Pages 1201

Project D985

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		FICA	to ZOE		LY MXP	7)		March 1996	(O
BIDGET ACTIVITY	open er i de samen er en samen er		PE N	PE NUMBER AND TITLE	TITLE				d	PROJECT
6 - Management Support			090	5712A S	upport o	f Operat	0605712A Support of Operational Testing	ng B		D987
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Development Sustainment & 3199	3199	6002	4396	5223	5198	6290	96396		Continuing	Continuing Continuing

Fort Huachuca, Fort Hunter Liggett, Fort Hood and Fort Sill. This funding also completes development of OPTEC's interim RTCA capability that supports the Battlefield collection and telemetry systems initiated in FY 1995. This is essential to ensure command and control; and system performance measures of effectiveness (MOEs) can be evaluated with objective and responsive attributes as opposed to subjective estimates. It provides an instrumented capability to capture data at remote, mobile, tactical field A. Mission Description and Budget Item Justification: Project D987 - OPTEC Instrumentation Sustainment & Development: To remain abreast of new weapons locations, and electronically transmit the data to receiving, control, and evaluation stations at the respective test directorates. These directorates are located at Fort Bliss, instrumentation. It supports Real-Time Casualty Assessment (RTCA) providing realistic simulated attrition of forces. Continues the development of non-intrusive data and communications systems, OPTEC requires advanced technology insertion into instrumentation prior to the system tests. This project provides a cost effective data analysis by integrating combat simulators into operational tests and by inserting technology advances into OPTEC instrumentation. It replaces obsolete and worn out instrumentation capability and develops non-major instrumentation that is non-intrusive, more reliable, and provides near real-time access of data for test control and collection, telemetry, and processing capability to conduct credible and robust operational tests as required by the DoD and Congress. It modernizes OPTEC's Combat Identification System (BCIS), Armored Gun System (AGS), Bradley Fighting Vehicle System (BFVS) and other force-on-force tests.

FY 1995 Accomplishments: Acquire or modify instrumentation to conduct ACAT I, ACAT II-IV, and Multi-Service tests funded in Project D001:

- Air Defense Artillery (ADA) Data Link Interface
- Automated Intelligence/Electronic Warfare Test System (AI/EWTS) Upgrades
 - Buffered Airdrop Altitude Transducer

 - Command Audio/Visual Upgrade 681
 - Commercial Radio Upgrade
- Digital Camera System 62
- Digital Imaging Cameras
- Hi-Frequency EW Upgrades 92
- Operational Test Display System 245
- Video Instrumentation 102
- · Video Telemetry and Recording System 472
- Telemetry Discriminator
- · High Speed Data Recording System

Project D987

Page 12 of 14 Pages





Ľ.	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	t Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing	PROJECT II Testing D987
FY 1995 Accomplis 1219 1111 Total 3199	 FY 1995 Accomplishment: (continued) Acquire equipment and software to provide interim RTCA capability to support the LONGBOW APACHE IOTE and other tests requiring RTCA: 1219 - Mobile TEC (MTEC) Real Time Casualty Assessment (RTCA) Capability 111 - Pairing Through Obscuration - CO2 Real Time Casualty Assessment (RTCA) 107 - Mobile Integrated Non Intrusive (MINI) - C31 Total 3199 	interim RTCA capability to support the LONGBOW APACHE I Assessment (RTCA) Capability Fime Casualty Assessment (RTCA) C31	OTE and other tests requiring RTCA:
FY 1996 Planned Program: equipment/software to provide	Acquire/ modify instrumentation to e interim RTCA capability to supportations Range Network ved Field Data Collector Speed Video Systems Performance Aircraft Tracking & Re e Command Post nedia Data Transfer System Telemetry and Recording System nated and Intelligence/Electronic Watic Surveyor 4000SE e TEC (MTEC) Real Time Casualty //FDC Interface c Operational Test STTR ed Economic Assumption not availal ed Economic Assumption System media Data Transfer System Speed Video Systems Control System Optic Range Network	support ACAT I, ACAT II-IV, and Multi-Service tests funded in Project D001 and acquire t tests requiring RTCA. cording System cording System Assessment (AI/EWTS) External Modulation Sources Assessment (RTCA) Capability	Project D001 and acquire
Project D987		Page 13 of 14 Pages	Exhibit R-2 (PE 0605712A)

RDT&E BUDGET ITEM JUSTIFIC	FICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712A SUPE	ютпте Support of Operational Testing	PROJECT D987
FY 1997 Planned Program: (continued) 230 - Operational Test Perspective View and Visualization 1417 - K-Band Test Obscuration Pairing System 300 - Video Capture/Processing System 40 - Instrumented Personnel Parachutes 80 - Geodetic Surveyor 4000SSE 330 - AI/EWTS First Generation Upgrade Total 4396	uo		New Year and the control of the cont
ter (FY 1996) 1995)	1995 FX 1996 3007 6169 2944	<u>FY 1997</u> 4516	
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996	6062 -60		
Adjustments to 1 1 1770 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget		-120	
bmit	3199 6002	4396	
Change Summary Explanation: Funding: FY 1995: 255 increase resulted from below threshold reprogramming.	reprogramming.		
Project D987	Page 14 of 14 Pages		Exhibit R-2 (PE 0605712A)
	1204		

1204 UNCLONIFIED



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	FION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605801A Programwide Activities	TITLE Programw	vide Acti	vities			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	94119	61913	61092	88343	87619	69269	62270		Continuing	Continuing
M881 RDTE Command/Center/General	74684	61913	58305	58988	24823	54352	26255		Continuing	Continuing
MM75 Federal Workforce Restructure	842	0	2787	29355	29766	5207	6473		Continuing	Continuing
MAC3 Ozone Depleting Chemicals (ODC) Ellmination	17805	0	0	0	0	0	0		0	26279
MAC4 Pollution Prevention in Acquisition	788	0	0	0	0	0	0		0	788

0605854A. Includes research and development effort directed toward support of installations or operations required for general research and development use and therefore management and administrative functions at Army Research, Development, Test, and Evaluation (RDTE) commands, centers and activities required to accomplish overall Army programs for elimination of ozone depleting chemicals in weapons systems and pollution prevention in the acquisition of weapon systems. Project M881 reflects a assigned general research and development missions not directly related to specific research and development projects. Also provides funding to develop and implement glide path in response to Army infrastructure drawdown initiatives. FY 1995 MAC3 reflects Army initiatives to comply with Public Law and International treaties to eliminate ozone depleting chemicals. Project MAC4 (Pollution Prevention in Acquisition) is in response to Presidential directions on reducing use and/or release of hazardous materials on DoD installations. Beginning in FY 1996, Ozone Depleting Chemicals Elimination and Pollution Prevention in Acquisition are funded in PE Mission Description and Budget Item Justification: This program funds the continued operation of non-Army Management Headquarters Activities (AMHA) is appropriate to Budget Activity 6.

Page I of 7 Pages

RDT&E BUDGET ITEM JUST			S S S S	IFICATION SUSET (R-2 Exhibit)	ZEXPI			DAIE	March 1996	<i>(</i> 0
BUDGET ACTIVITY 6 - Management Support		A STATEMENT OF STA	PE NI 060	PE NUMBER AND TITLE 0605801A Programwide Activities	IITLE Programw	vide Acti	/ities		PF	PROJECT W881
COST (In Thousands) Actual E	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to	Total Cost
M881 RDTE Command/Center/General 74684	74684	61913	58305	58988	57853	54352	55797		Continuing Continuing	Continuing

Louis, MO; U.S. Army Research Laboratory, Adelphi, MD; U.S. Army Missile RDE Center, Redstone Arsenal, AL; U.S. Army Tank-Automotive RDE Center, Warren, MI; U.S. Army Aviation and Troop Command R&D Integration Office, St. Louis, MO; U. S. Army Chemical Biological Defense Command, Aberdeen Proving Ground, MD; Acquisition Activity (USAMRAA) in support of the Army Medical Research and Materiel Command (USAMRMC) RDT&E programs and its tenant organizations at Ft. realigned from Program Element 0605898A in FY 97. Requested resources finance salaries and related support costs for authorized civilian personnel. This program is U.S. Army Communications-Electronics Command RDE Center, Ft. Monmouth, NJ; U.S. Army Belvoir RDE Center, Ft. Belvoir, VA; U.S. Army Test and Evaluation Detrick, MD, including medical materiel procurement contracts for the U.S. Army Medical Materiel Agency and the Office of the Surgeon General, Army which was management and administrative functions at the following Army RDTE commands, centers and activities: U.S. Army Research Institute for the Behavioral and Social Command, Aberdeen Proving Ground, MD; and four international RDTE Standardization Groups located in Australia, Canada, Germany, and United Kingdom. This Sciences, Alexandria, VA; U.S. Army Armament Research, Development and Engineering (RDE) Center, Picatinny Arsenal, NJ; U.S. Army Aviation RDE Center, St. project also provides continued operations of contracting and acquisition management and related administrative functions performed by the Army Medical Research A. Mission Description and Budget Item Justification: Project M881 RDTE Command/Center/General Administrative Support: Supports the non-AMHA central to efficient management of the total Army RDTE program.

FY 1995 Accomplishments:

- Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army Continue operation of the four Standardization Groups and AMC representative in France. Funds U.S. share of embassy costs non-AMHA RDTE commands, centers and activities.
 - (communications, custodial services, utilities and guard services)
 - Fund travel of the Army Science Board
- Continue to provide acquisition management functions in support of USAMRMC RDT&E programs and its tenant organizations, Ft Detrick, MD Fund quick reaction capability for accident investigations at U.S. Army Aviation and Troop Command and unique costs related to tenant support. 1039 5072
 - including medical materiel procurement contracts, and procurement of biological defense vaccines.

74684 Total Page 2 of 7 Pages

Project M881







	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605801A Programwide Activities	PROJECT M881
FY 1996 Planned Program: • 51881 Provide	rogram: Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army	ive functions at a level consistent with mission requirements a	and support needs at Army
• 4150	Continue operation of the four Standardization Groups and A custodial services, utilities and guard service).	non-Apprix, AD 15 commands, centers and activities. Continue operation of the four Standardization Groups and AMC representative in France. Funds U.S. share of embassy costs (communications, custodial services, utilities and guard service).	osts (communications,
292	Fund travel of the Army Science Board Fund onick reaction canability for accident investigations at 1	Fund travel of the Army Science Board Fund quick reaction capability for accident investigations at U.S. Army Aviation and Troop Command and unique costs related to tenant support.	elated to tenant support.
3774	Continue to provide research, development, and acquisition management fu organizations, Ft Detrick, MD including medical material procurement contemporary processes and provided into this PE	Continue to provide research, development, and acquisition management functions support of USAMRMC RDT&E programs and its tenant organizations, Ft Detrick, MD including medical materiel procurement contracts, and procurement of biological defense vaccines. Program resources	ams and its tenant accines. Program resources
342	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Revised Economic Assumption not available for execution	Technology Transfer (STTR)	
Total 61913			
FY 1997 Planned Program:	rogram:	The content of the co	and amount moods at Arms
• 45807	Provide continued operation of management and administration-AMHA RDTE commands, centers and activities	Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army non-AMHA RDTE commands, centers and activities	and support needs at Army
• 4045	Continue operation of the four Standardization Groups and A custodial services.	Continue operation of the four Standardization Groups and AMC representative in France. Funds U.S. share of embassy costs (communications, custodial services, utilities and guard services	costs (communications,
868	Fund quick reaction capability for accident investigations at	Fund quick reaction capability for accident investigations at U.S. Army Aviation and Troop Command and unique costs related to tenant support.	elated to tenant support.
• 7555	Continue to provide acquisition management functions in sul including medical materiel procurement contracts, and procu	Continue to provide acquisition management functions in support of USAMRMC RUT&E programs and its tenant organizations, Ft Detrick, MD including medical material procurement contracts, and procurement of biological defense vaccines. Funds the operation of the USAMRMC Hqs	zations, Fr Detrick, MID of the USAMRMC Hqs
Total 58305	activities which administers the medical research, developme	activities which administers the medical research, development, and acquisition program to sustain mintary technology superiority.	periority.
Project M881	Pag	Page 3 of 7 Pages Exhibit R-2	Exhibit R-2 (PE 0605801A)
		1207	

ET ITEM JUST	CATION		FICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY	0.	PE NUMBER AND TITLE	TITLE	PROJECT
6 - Management Support	_	0605801A	0605801A Programwide Activities	M881
B. Project Change Summary	7 1995	FY 1996	FY 1997	
V 1996)	76619	63649	55365	,
	73673			
	+1011			
Appropriated Amount (FY 1996)		62529		
Adjustments to FY 1996		-616		
Adjustments to Budget year (FY 1997) since			+2940	
FY 1996 President's Budget				a) iso Medical
Current President's Budget Submit	74684	61913	58305	

Change Summary Explanation: Program resources from PE 0605898A, project MM03 will be transferred into this PE. (FY97)

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Project M881





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	rem Jus	TIFICA.	TION SE	HEET (R	-2 Exhil	bit)		DATE N	March 1996	9
вир бет АСТІ ИІТУ 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605801A Progi	TITLE Programwide Activities	ride Activ	rities		a ~	PROJECT MM75
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MM75 Federal Workforce Restructure	842	0	2787	29355	29766	5207	6473		Continuing	Continuing
A. Mission Description and Budget Item Justification: Project MM75 Federal Workforce Restructure. Requirements were defined by the Federal Workforce Restructuring Act of 1994. Funds are to be used to offset the expenses of VERA/VSIP, the \$80 per capita tax to be remitted to the Treasury (Civil Service Retirement and Disability Fund) for on-board personnel as of 31 March and the 9% tax on the final basic pay of each employee who retired under VERA/VSIP to be remitted to the Civil Service Retirement and Disability Fund. Distribution will be made in the year of execution.	cation: Proj offset the ex farch and the	ect MM75 F penses of VI 9% tax on th	ederal Wor SRA/VSIP, t te final basic ar of executi	rkforce Rest the \$80 per c pay of each on.	ructure. Re apita tax to k	quirements voe remitted to	vere defined the Treasunder VERA/	l by the Fed ry (Civil Se VSIP to be	ect MM75 Federal Workforce Restructure. Requirements were defined by the Federal Workforce penses of VERA/VSIP, the \$80 per capita tax to be remitted to the Treasury (Civil Service Retirement and 9% tax on the final basic pay of each employee who retired under VERA/VSIP to be remitted to the Civil de in the year of execution.	ce tent and e Civil
FY 1995 Accomplishments: • 842 Funds were distributed to qualifying program elements. Total 842	alifying prog	ram element	vì							
FY 1996 Planned Program: Project not funded.										
FY 1997 Planned Program: • 2787 Funds will be distributed to qualifying program elements. Total 2787	qualifying pro	gram eleme	nts.							
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)		EY 1995 2500 2500 -1658		FY 1996 0	FY 1997 0					
Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget					2787					
Current President's Budget Submit		842	23	0	2787					

Page 5 of 7 Pages 1209

Project MM75

RDT&E BUDGET ITEM JUSTI		TFICA	SZO		FICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	· ·
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605801A Prog	nnle Programv	TITLE Programwide Activities	vities			PROJECT MAC3
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MAC3 Ozone Depleting Chemicals (ODC) Elimination	17805	0	0	0	0	0	0		0	26279
A. Mission Description and Budget Item Justification: Project MAC3 - Ozone Depleting Chemicals (ODC) Elimination: Develops and implements the Army program to eliminate the use of ODC on/for weapon systems. The program has been established due to International Agreements (Montreal Protocol), Title VI of the Clean Air Act of 1990.	<u>ation:</u> Proje n systems. Tł	ct MAC3 - ie program l	Ozone Depl as been esta	eting Chem blished due	icals (ODC) to Internatio	Eliminational Agreeme	n: Develop ents (Montre	s and impler al Protocol)	nents the An	ny the Clean
FY 1995 Accomplishments: 1000 Funds required for complete Test and Evaluation for Halon 1301 replacement of ground vehicles 1125 Funds required for joint Army/Navy/Air Force/Federal Aviation Agency project to find a Halon 1301 replacement for aviation engine nacelles. 255 Funds required to continue project alternatives for aviation specific Ozone-Depleting solvents in critical applications and expand to other critical engages.	Test and Eva ly/Navy/Air F roject alterna	luation for F orce/Federa iives for avia	Ialon 1301 r I Aviation A ation specific	eplacement gency proje c Ozone-Dep	of ground ve ct to find a I	shicles Ialon 1301 r nts in critica	eplacement I applicatior	for aviation is and expan	engine nacel id to other cr	es. tical
 14716 Funds required to begin Fire Safety Test Enclosure. 473 Funds required for alternatives to ODC solvents used in ammunition processes and testing of NBC equipment 236 Funds required for program management oversight Total 17805 	Safety Test Ees to ODC so management	nclosure. Ivents used i	in ammunitid	on processes	and testing	of NBC equi	ipment			
FY 1996 Planned Program: Realigns environmental compliance resources to PE 0605854A, Pollution Prevention.	tal complianc	e resources	to PE 06058	354A, Pollut	ion Preventi	on.				
FY 1997 Planned Program: Realigns environmental compliance resources to PE	tal complianc	e resources		354A, Pollut	0605854A, Pollution Prevention.	on.				
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996)		EV 1995 18089 17709 +96		FY 1996 0	FY 1997 0					
Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit		17805	5	0	0					
Project MAC3			Page 6 of 7 Pages	f 7 Pages		egyköyöjigistatkinnikkokitannos (anis psi	Exhil	oit R-2 (PE	Exhibit R-2 (PE 0605801A)	The state of the s





RDT&E BUDGET ITEM JUS	EM JUS		TION S	IIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE M	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605801A Programwide Activities	ritle rogramw	vide Activ	/ities		a e	PROJECT MAC4
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MAC4 Pollution Prevention in Acquisition	788	0	0	0	0	0	0		0	788

A. Mission Description and Budget Item Justification: Project MAC4 - Pollution Prevention in Acquisition: Develop and implement the Army program to comply with section 3-303 of Executive Order 12856 of 3 August 1993, which requires the elimination/reduction of hazardous materials/processes from acquisition/procurement within the Army.

FY 1995 Accomplishments:

FY 1996 Planned Program: Realigns environmental compliance resources to PE 0605854A, Pollution Prevention.

FY 1997 Planned Program: Realigns environmental compliance resources to PE 0605854A, Pollution Prevention

FY 1997 0	0
FY 1996 0	0
FY 1995 906 887 -99	788
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to By 1996 Adjustments to Budget year (FY 1997) since	FY 1996 President's Budget Current President's Budget Submit

Project MAC4

Page 7 of 7 Pages

RDT&E BUDGET ITEM JUST			TONSE	FICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE	March 1996	10
BUDGET ACTIVITY 6 - Management Support			PE NI 060 Dev	PENUMBERAND TITLE 0605802A Interior	rrte nternatio nt	nai Coop	erative F	e NUMBER AND TITLE 3605802A International Cooperative Research and 3evelopment		PROJECT M798
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M798 International Cooperative Research and Development-Army Research Institude	1581	1561	1566	1559	1551	1547	1547 1534		Continuing	Continuing Continuing

cooperative R&D initiatives and international cooperative agreements, such as memoranda of understanding. This program also includes the United States' share of costs of A. Mission Description and Budget Item Justification: The goal of this program is to expand worldwide allied standardization and interoperability through cooperative working groups with many nations. This project supports general research and development activities and since it is not allocable to specific R&D missions is appropriately equipment, etc.) required to participate in international fora, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), and to pursue new (SNR(A)); the American, British, Canadian, Australian (ABCA) Standardization Program; the Technical Cooperative Program; bilateral staff talks; and Army armaments the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning; partially funds the Four Power Senior National Representatives Army research and development (R&D) and technology sharing. This program partially finds the travel costs and administrative support (studies, analysis, interpretation, funded in Budget Activity 6.

FY 1995 Accomplishments:

Funded domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies 765

Funded the United States' share of the NIAG and Special Fund for cooperative planning budget

Total

FY 1996 Planned Program:

Funded domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the 869

Funded the United States' share of the NIAG and Special Fund for cooperative planning budget United States and its Allies

Small Business Innovative Research/Science and Technology Transfer (SBIR/STTR)

Revised Economic Assumption not available for execution



Page 1 of 2 Pages

Project M798



) DATE March 1996	PENUMBER AND TITLE 0605802A International Cooperative Research and M798 Development	ng military application and mutual benefits to the		Exhibit R-2 (PE 0605802A)
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	PE NUMBER AND TITLE 0605802A International Development	gram: Funded domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies Funded the United States' share of the NIAG and Special Fund for cooperative planning budget	EX 1996 FX 1997 1615 1606 1609 1581 1578 -17 -43 1581 1561 1566	Page 2 of 2 Pages
RDT&E BUDGET ITEM JU	BUDGET ACTIVITY 6 - Management Support	FY 1997 Planned Program: T16 Funded domestic and international travel United States and its Allies 850 Funded the United States' share of the NI Total 1566	B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	Project M798

RDT&E BUDGET ITEM JUST		S STREET	SO	FICATION SHEET (R-2	-2 Exhibit)			DATE	March 1996	
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605803A Tech	יוות ב Technical Information Activities	nforma	ion Acti	/ities		
COST (in Thousands)	FY 1995 Actual	FY 1996 · Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	14039	13420	16921	17424	17867	18315	18950	•	Continuing	Continuing
DC16 Field Assistance in Science and Technology	2758	2703	2798	2871	2990	3131	3268	ı	Continuing	Continuing
DC18 Board on Army Science and Technology	663	899	069	707	724	740	757	1	Continuing	Continuing
M720 Technical Information Functional Activities	2176	7722	2626	2727	2779	2788	2865	-	Continuing	Continuing
M727 Technical Information Activities	2983	2615	2870	3046	3166	3314	3526	•	Continuing	Continuing
M729 Youth Science Activities	2083	1924	2309	2368	2425	2481	2538	1	Continuing	Continuing
D730 Personnel and Training Analysis Activities	2856	2955	3448	3535	3622	3705	3858	•	Continuing	Continuing
M731 Government/Industry Data Exchange Program/Advisory Group on Electronic Devices (GIDEP/AGED)	150	278	0	0	0	0	0	•	0	428
M733 Acquisition Technology Act	370	0	2180	2170	2161	2156	2138	Alternative State of the state	Continuing	Continuing
er og det frederingen og det for en skall forsender i men det også en bydden skallender i det forsender også e	and the second s	and the second of the second s								

technical skills in the DoD and National workforce. It accomplishes this through outreach programs that provide direct working experience for high school students in Army This program also provides for science advisors to Commanders-in-Chief (CINCs) and major Army commands and engineering teams to directly solve field Army technical peer review and the Army Science and Technology Master Plan (ASTMP). These programs are accomplished under the management of the Army Research Laboratory, the problems. Coordination of this program with other Services is achieved through interservice working groups. The work in this program element is consistent with rigorous Army Materiel Command, the Army Research Office, the Army Research Institute, the Army Corps of Engineers and the Information Management Office. The projects in behavioral science-based analytic tools, to provide policy and decision makers with soldier oriented recommendations concerning manpower, personnel and training issues. and management information at all levels of Army Research and Development (R&D). This includes initiatives to improve information derivation, storage, access, display, Mission Description and Budget Item Justification: This program provides for upgrading the accuracy, timeliness, availability, and accessibility of scientific, technical, validation, transmission, distribution, and interpretation. This program addresses the need to increase the competitiveness and availability of scientific, engineering, and laboratories, thereby exposing these students to the working world of science and engineering. Funding under this program provides for the conduct of analyses, using this Program Element include management support of Science and Technology efforts and therefore are correctly placed in Budget Activity 6.

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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605803A Tech	E NUMBER AND TITLE D605803A Technical Information Activities	Informa	tion Activ	1		PROJECT DC16
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC16 Field Assistance in Science and Technology	2758	2703	2798	2871	2990	3131	3268		Continuing	Continuing Continuing

CINCs and commanders and to operate the director's office. FAST tours provide major professional growth for scientists and engineers. Science advisers are recruited from Command (AMC) resources to rapidly identify and solve field Army technical problems affecting improved readiness, safety, training, and Operations and Support (O&S) AMC engineering centers to serve Commanders-in-Chief (CINCs) and major Army commanders world-wide and are supported by assigned Quick Reaction Coordinators (QRCs) within each AMC engineering center. All costs associated with science advisor assignments are funded by AMC subordinate commands who supply the science A. Mission Description and Budget Item Justification Project DC16 - Field Assistance in Science and Technology (FAST): This program focuses Army Materiel cost reductions. The Commanding General, AMC institutionalized AMCFAST in 1988 to plan for and allocate all AMCFAST program funding for projects to support advisers for two to three year tours. FAST manages a level of effort type project with most projects recouping many times their cost in O&S cost savings.

FY 1995 Accomplishments:

- Provided continuous activity on over 250 FAST projects. Defined, tested and recommended technological solutions to materiel problems identified by CINCs worldwide and prepared operational needs statements and test results for the highest priority programs
 - Provided professional growth opportunity for 20 science advisers on two year and three year tours and 30 FAST-junior scientists and engineers on two to eight week tours
 - · Provided professional growth opportunity for 25 personnel in the Scientist and Engineers Field Experience With Soldiers (SEFEWS) program

Total 275

FY 1996 Planned Program:

- Provide continuous activity on over 265 FAST projects. Define, test and recommend technological solutions to material problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs
 - Provide professional growth opportunity for 20 science advisers on two year and three year tours and 30 FAST-junior scientists and engineers on two to eight week tours
- Provide professional growth opportunity for 55 personnel in the SEFEWS program
 - 52 SBIR/STTR
- 19 Revised economic assumption not available for execution

Fotal 270

Project DC16

1015

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION SH	EET (R-2 EX	DATE	900
BUDGET ACTIVITY 6 - Management Support	PE NU 060	PE NUMBER AND TITLE 0605803A Technic	ராட Technical Information Activities	PROJECT DC16
FY 1997 Planned Program: 2798 - Provide continuous activity on over 280 FAST projects. Define, test and recommend technological solutions CINCs worldwide and prepare operational needs statements and test results for the highest priority programs - Provide professional growth opportunity for 20 science advisers on two year and three year tours two to eight week tours - Provide professional growth opportunity for 70 personnel in the SEFEWS program Total 2798	AST projects. Define, te needs statements and to or 20 science advisers o or 70 personnel in the S	st and recommend tee est results for the high n two year and three y EFEWS program	Provide continuous activity on over 280 FAST projects. Define, test and recommend technological solutions to materiel problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs - Provide professional growth opportunity for 20 science advisers on two year and three year tours and 40 FAST-junior scientists and engineers on two to eight week tours - Provide professional growth opportunity for 70 personnel in the SEFEWS program	tified by gineers on
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	EY 1995 2843 2783 -25	EY 1996 FY 1997 2778 2880 2980 2730	7 Z	
Appropriated Amount (FT 1990) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 Presidents Budget		-27 -82	2	en e
Current President's Budget Submit	2758	2703 2798		
Project DC16	Page 3 of 17 Pages	17 Pages	Exhibit R-2 (PE 0605803A)	3A)





RDT&E BUDGET ITEM JUST	TEM JUS	TIFICAL	TION SE	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)	_	DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	E NUMBER AND TITLE	тпсе echnical	Informa	E NUMBER AND TITLE 0605803A Technical Information Activities	ities	. .	PROJECT DC18
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC18 Board on Army Science and Technology	663	899	690	707	724	740	757	,	Continuing Continuing	Continuing

Research Council (NRC) through its Commission on Engineering and Technology Systems at the request of the Under Secretary of the Army. The BAST designs, conducts, A. Mission Description and Budget Item Justification Project DC18 - Board on Army Science Technology (BAST): The BAST was created in 1982 by the National and supervises the NRC's army-related studies of scientific and technological issues. As such, the BAST defines problems, brings together leading experts to study them, and most importantly, draws conclusions, identifies alternatives and implications, and makes recommendations as appropriate. The major activities of this group include board meetings, special requests, standing committees, study committees and workshops and seminars.

FY 1995 Accomplishments

- Provided support for forecast of Army science and technology needs and responded to immediate science and technology requirements
- Provided technical experts and participated in HQDA peer reviews for annual In-House Laboratory Independent Research (ILIR) and Research and Development Achievement (RDA) awards
 - Initiated study addressing the research status of space-based communications technology for C3I to "win the information war"
 - Total 663

FY 1996 Planned Program:

- Provide technical expert support for forecast of Army science and technology needs and respond to immediate science and technology requirements
 - Provide experts to participate in peer reviews for annual ILIR and RDA awards review
- Conclude study addressing research status of space-based communications technology for C3I to "win the information war"
 - 15 SBIR/STTR
- 5 Revised economic assumption not available for execution
- Fotal 668

FY 1997 Planned Program:

- Provide technical expert support for forecast of Army science and technology needs and respond to immediate science and technology requirements 069
 - Provide experts to participate in peer reviews for annual ILIR and RDA awards review
 - Initiate BAST study on "Compact Power"

Total 690

Project DC18

1012

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE March 1996	The second
вирсет Астіvіту 6 - Management Support	PE NUMBER AND TITLE 0605803A Tech	Technical Information Activities	PROJECT Aities DC18	
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) 663	FY 1996 687	FX 1997 704		o construente estádo per o construente en estado e
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	675 7-	-14		
FY 1996 Presidents Budget Current Budget Estimate Submit	899	069		on unguino pulikulas paremos
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Project DC18	Page 5 of 17 Pages	Exhil	Exhibit R-2 (PE 0605803A)	





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE N	March 1996	တ
BUDGET ACTIVITY 6 - Management Support			PE NI 060	E NUMBER AND TITLE D605803A Technical Information Activities	ritle e chnical	Informat	tion Activ	/ities	IG 2	РRОЈЕСТ M720
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M720 Technical Information Functional Activities	2176	2277	2626	2727	2779	2788	2865	•	Continuing	Continuing Continuing

Technical Information Center (DTIC) Work Unit Information Summary (WUIS) database; Army support for the Federated Laboratory Consortium (FLC); the Army Science laboratories and centers. Technology transfer activities make technical information available to both the public and private sectors to reduce duplication in R&D programs commands and laboratories patent fees and patent legal expenses. The requirement to fund this effort is a result of the Omnibus Budget Reconciliation Act requiring the U. Board; administration of the Army's Small Business Innovative Research (SBIR) and Small Business Technology Transfer Pilot Program (STTR) in accordance with the and to increase competitiveness in the U.S. business community. In addition this project provides funding for all U. S. Army Materiel Command (AMC) subordinate acquisition, storage, and utilization of technical information for both military and domestic applications. Activities supported are: Army participation in the Defense administrative costs, studies and analyses to support the Acquisition Corps acquisition and retention of scientists and engineers and improvement of productivity of A. Mission Description and Budget Item Justification Project M720 - Technical Information Functional Activities: Technology transfer activities to support "Small Business Research and Development Enhancement Act of 1992". These costs are funded here because the Act prohibits use of PE #0605502 for funding S. Patent and Trademark Office to become a completely user-fee funded agency.

FY 1995 Accomplishments:

- Provided managerial, programming, data base, clerical and personnel support to process, store, control and report the WUIS, 1498's
 - Provided the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report
 - Provided Army funding support for FLC as required by Public Law 99-502
- Provided administrative and contractual support for the Army Science Board which included organizing 2 general membership meetings and a
 - summer study
- 1154 Provided administrative support for SBIR/STTR programs
- Provided Army Science and Technology Reports to include Technology Transfer Brochure
 - Provided Army funding support for patent fees and patent legal expenses
- Provided for Army S&T Summer Study in FY 1996 by awarding admin support contract, completing site survey and releasing call for papers

tal 217

FY 1996 Planned Program:

- 985 Continue managerial, programming, data base, clerical and personnel support to process, store, control and report the WUIS, 1498's
 - Provide the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report
 - Provide Army funding support for FLC as required by Public Law 99-502
- Provide administrative and contractual support for the Army Science Board

Project M720

1219

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATION		R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	Commence of the China and the	PE NUMBER AND TITLE 0605803A Tech	Technical Information Activities	Project ctivities M720
FY 1996 Planned Program: (continued) 1225 - Provide Army Science and Technology Summer Study and awards - Provide administrative support for SBIR/STTR programs - Provide funding for AMC commands and laboratories patent fees and patent legal expenses 51 - SBIR/STTR 16 - Revised economic assumption not available for execution	Summer Study and VSTTR programs nd laboratories pate able for execution	l awards nt fees and paten	legal expenses	,
FY 1997 Planned Program: 9 Continue managerial, programming, data base, clerical and personnel support to process, store, control and report the WUIS, 1498's - Provide the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report - Provide Army funding support for FLC as required by Public Law 99-502 - Provide administrative and contractual support for the ASB - Provide Army Science and Technology Reports - Provide funding for AMC commands and laboratories patent fees and patent legal expenses - Provide funding for Army Science and Technology Summer Study and awards	ta base, clerical and al data collection an as required by Pub support for the ASE R/STTR programs Reports nd laboratories pate Technology Summ	i personnel supported printing of the olic Law 99-502 3 mt fees and paten er Study and awa	rt to process, store, control and reg DoD Tri-Service In-House RDT& t legal expenses rds	oort the WUIS, 1498's E Facilities Report
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995)	FY 1995 1689 1653	EY 1996 2341	FX 1997 2397	
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	5754	2300	+229	
FY 1996 Presidents Budget Current Budget Estimate Submit for FY 1997	2176	2277	2626	
Project M720	Pag	Page 7 of 17 Pages		Exhibit R-2 (PE 0605803A)
		1220		





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BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605803A Technical Information Activities	пте echnical	Informa	tion Activ	rities	a e	PROJECT M727
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M727 Technical Information Activities	2983	2615	2870	3046	3166	3314	3526	į	Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification Project M727 - Technical Information Activities: This project supports development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test and Evaluation (RDTE) Appropriation. It includes the hardware, software and contractor support required to develop and implement a set of management decision aids, databases, and hardware/software tools to support technical and budgetary decisions at the Office, Secretary of Defense (OSD), Department of the Army (DA), Corps of Engineers and Army Materiel Command (AMC) levels. This project includes support of the Acquisition Management Integration Subgroup (AMIS) dealing with acquisition management systems.

FY 1995 Accomplishments:

- Continued the Science and Technology Data Base computer engineering support contract
 - Continued support to Army S&T strategic planning, analysis, and prioritization
 - Continued support to AMC database and Defense Reliance management
- Provided guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems

2983 Total

FY 1996 Planned Program:

- 2541 Continue the Science and Technology Data Base computer engineering support contract
 - Continue support to Army S&T strategic planning, analysis, and prioritization
- Continue support to AMC database and Defense Reliance management
- Provide guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS
 - SBIR/STTR
- Revised economic assumption not available for execution

2615 Total

FY 1997 Planned Program:

- Continue the Science and Technology Data Base computer engineering support contract
 - Continue support to Army S&T strategic planning, analysis, and prioritization
 - Continue support to AMC database and Defense Reliance management
- Provide guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS

Total

2870

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605803A Tech	D TITLE Technical Information Activities	
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1006 Presidents Budget	EY 1996 2731 2641 -26	FX 1997 2737 +133	
Current Budget Estimate Submit for FY 1997 2983	2615	2870	
Project M727	Page 9 of 17 Pages	Exhib	Exhibit R-2 (PE 0605803A)
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RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	မွှ
BUDGET ACTIVITY 6 - Management Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605803A Tech	TITLE echnical	Informa	E NUMBER AND TITLE 3605803A Technical Information Activities	rities	I N	PROJECT M729
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M729 Youth Science Activities	2083	1924	2309	2368	2425	2481	2538	•	Continuing Continuing	Continuing

& Engineering Apprenticeship Program (SEAP) has been included into the overall effort. This provides an eight week hands-on learning experience for high school students youths to develop interest and achieve higher levels in science, engineering, and mathematics. These activities are consolidated within this program to "present the Army" to a potential pool of technical talent to fill future Army needs. No other program fulfills this long-range Army goal. The joint Army/Navy Washington regional area Science working with bench level scientists within Army laboratories in hopes of encouraging more of them to enter scientific fields of study in the future. This program enhances A. Mission Description and Budget Item Justification Project M729 - Youth Science Activities: Supports science activities to encourage over 100,000 high school the National Laboratory Science and Engineering pool which in turn supports Defense industry and laboratory needs.

FY 1995 Accomplishments:

- Junior Science and Humanities Symposia (JSHS), over 300 science and engineering fairs, the US Math Association and sponsored 6 students for 2083 - Continued to foster high school student interest in science, mathematics, engineering and computer science, nationally, by supporting: 47 regional the US math team to participate in the International Math Olympiad (IMO), and supported socially/economically disadvantaged high school
 - Placed 720 high school students in Army/Navy laboratories in the Washington area under the Science & Engineering Apprenticeship Program students in a 6 to 15 week assignment with a selected mentor for the Research and Engineering Apprentice Program (REAP)
- Continued special tutorial programs for Native Americans, African Americans and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level

FY 1996 Planned Program:

- Continue to foster high school student interest in science, mathematics, engineering and computer science, nationally, by sponsoring: JSHS, IMO and REAP
- Continue the Joint Army/Navy Washington Regional Area Science & Engineering Apprenticeship Program and increase Army Laboratory/RDE Center sponsorship of students
- Continue special tutorial programs for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level
 - SBIR/STTR
- Revised economic assumption not available for execution

Total

Project M729

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RDT&E BUDGET ITEM JUSTI	IFICATION SHEET (R-2 Exhibit)	(R-2 Exhibit) DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605803A Tech	nical Information Activities
FY 1997 Planned Program: 2309 - Continue to foster high school student interest in science, mathematics, engineering and coand REAP - Continue the Joint Army/Navy Washington Regional Area Science & Engineering Appren Center sponsorship of students - Continue special tutorial programs for Native Americans, African Americans, and Spanish of attending and completing engineering and/or science curriculum at the university level and centers - Continue the West Point cadet research internship program to enhance cadet training throus and centers	est in science, mathematics, en Regional Area Science & Eng ve Americans, African Americs nd/or science curriculum at the rnship program to enhance cad	 Operam: Continue to foster high school student interest in science, mathematics, engineering and computer science, nationally, by sponsoring: JSHS, IMO, and REAP Continue the Joint Army/Navy Washington Regional Area Science & Engineering Apprenticeship Program and increase Army Laboratory/RDE Center sponsorship of students Continue special tutorial programs for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level Continue the West Point cadet research internship program to enhance cadet training through field experience within Army research laboratorics and centers
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) Adjustments to Appropriated Value Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 Presidents Budget Current Budget Estimate Submit for FY 1997	EY 1995 1895 2302 1855 +228 1943 -19 2083 1924	FY 1997 2409 -100 -2309
Project M729	Page 11 of 17 Pages	ss Exhibit R-2 (PE 0605803A)
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 0 6 0	PE NUMBER AND TITLE 0605803A Tech	TITLE echnical	Informat	E NUMBER AND TITLE 0605803A Technical Information Activities	/ities		PROJECT D730
COST (In Thousands)	FY 1995 Actual	FY 1996 · Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D730 Personnel and Training Analysis Activities	2856	2955	3448	3535	3622	3705	3858	-	Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification Project D730 - Personnel & Training Analysis Activities: This project provides for the application of behavioral science-based analytical technologies by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to current and near-term soldier-related issues. The training on individual and unit readiness, the personnel costs of alternative force structures and the effects of a smaller Army on retention and readiness of quality soldiers. program is focused on policy issues designated to enhance soldier performance and provides the Army a unique capability for addressing such issues as the effects of Requirements for studies and analyses for critical personnel and training issues of immediate importance are solicited on an annual basis.

FY 1995 Accomplishments:

- Identified factors that most influence junior officer career commitment and the possible decision to leave the Army
- Analyzed enlistment, reenlistment, promotion, and separation policies; identified comparative trends in soldier attitudes regarding personnel system and organizational changes
- Analyzed trends in unit performance at the Combat Training Centers which reflect the effectiveness of tactical doctrine, unit organization, training, materiel, and leadership (DOTML)
 - Assessed the viability and effectiveness of the existing promotion, education, and professional development systems in the smaller Army of the

2856

Total

FY 1996 Planned Program:

- Determine effects of alternative compensation and personnel policies upon enlistment, attrition, retention, and separation decisions and costs in an era of downsizing.
- Determine skills and task training requirements for effective back-up operations to digitization when systems are degraded, disrupted or compromised.
- Continue analyses of trends in unit performance at the Combat Training Centers.
- Determine training, career and professional concerns of active duty Special Forces NCOs.
- Determine impact of reductions in training resources on the quality of TRADOC graduates' performance.
- 66 SBIR/STTR 20 - Revised econ
- 20 Revised economic assumption not available for execution

Total 295

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STECATION			DATE March 1996
BUDGET ACTIVITY 6 - Management Support	<u>a.</u>	PE NUMBER AND TITLE 0605803A Tech	тпе Technical Information Activities	PROJECT Ides D730
FY 1997 Planned Program: 3448 - Provide information for decisions about leader development program to meet current and future leadership requirements. - Determine efficient allocation of military pay and benefit resources; determine costs of alternative force mixes. - Recommend and evaluate solutions that will reverse adverse trends in unit performance identified at the Combat Training Centers. - Conduct analyses to support assessment, training, and development of Special Forces soldiers.	t leader development i ry pay and benefit res t will reverse adverse t, training, and develo	program to mee cources; determi trends in unit p ppment of Speci	st current and future leadership requireme ne costs of alternative force mixes. erformance identified at the Combat Trai al Forces soldiers.	ents. ining Centers.
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	FY 1995 2970 2908 -52	FX 1996 3038	FY 1997 3162	
Appropriated Amount (FT 1990) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 Presidents Budget		-30	+286	
Current Budget Estimate Submit for FY 1997	2856	2955	3448	
Project D730	Page .	Page 13 of 17 Pages	Exhibit	Exhibit R-2 (PE 0605803A)





RDT&E BUDGET ITEM JUST	EM JUS		FION SE	IFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE	March 1996	96
BUDGET ACTIVITY 6 - Management Support			PE N.	PE NUMBER AND TITLE 0605803A Technical Information Activities	тте echnical	Informa	tion Acti	vities		PROJECT M731
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M731 Government/Industry Data Exchange Program/Advisory Group on Electronic Devices (GIDEP/AGED)	150	278	0	0	0	0	0	·	0	428
A. Mission Description and Budget Item Justification Project M731 - Government/Industry Data Exchange program (GIDEP) and the Advisory Group on Electronic Devices (AGED): The Government/Industry Data Exchange Program is a joint government/industry effort for the exchange of data to enhance development, design, engineering logistics and cost defense weapon systems equipment. Funds support GIDEP reliability, maintainability and failure experiences interchange data bases. Documents technical design information not commercially available. The Engineering Design Handbook/Information Program (EDHP) was established in 1954 to provide an effective vehicle for documenting commercially unavailable military vital design information. The EDHP benefits the Army by preserving vital design information, providing a focal point for Army and/or Tri-Service coordination of critical design issues, eliminating redundant acquisition actions, providing customized contracting services, and assuring Army standardization.	ustry Data E ustry Data E on systems e rcially availt unavailable r coordination	t M731 - Go xchange Pro quipment. F able. The Er nilitary vital	wernment/I gram is a joi unds suppoi igineering D design infor	Industry Da int governme rt GIDEP rel besign Handt rmation. The	ta Exchange ent/industry liability, mai sook/Informe e EDHP ben ; redundant a	e program (effort for the ntainability ation Program effts the Arm requisition a	GIDEP) an exchange of and failure of m (EDHP) of the by presert of the by by presert of the by	id the Advis of data to en experiences was establist eving vital de iding custon	M731 - Government/Industry Data Exchange program (GIDEP) and the Advisory Group on change Program is a joint government/industry effort for the exchange of data to enhance developme luipment. Funds support GIDEP reliability, maintainability and failure experiences interchange data ble. The Engineering Design Handbook/Information Program (EDHP) was established in 1954 to proliitary vital design information. The EDHP benefits the Army by preserving vital design information of critical design issues, eliminating redundant acquisition actions, providing customized contracting	on pment, lata bases. o provide ation, ting
95 Accon	nge of data l rticipating (\$ mance, and d-Filled Proj mor and Its .	oetween indu (0) Complete Military Apr jectile Desigi Applications	sstry and gov d Engineeri olications; M n; MIL-HDE and comple:	vernment and ing Design H (IL-HDBK-4 3K-1211(MI)	d expansion landbooks:] 584, Design) Missile Fli P Catalog of	of the progra MIL-HDBK of Combat V ght Simulati handbooks	am covering -797(Ae), P 'ehicles for on Part 1, S	s Army elem olymide (N) Fire Surviva urface to Aii	ients (industr ylon) Plastics ability; r Missiles; Fi	y and re
Total 150										
FY 1996 Planned Program: 270 Complete the information exchange of data between industry and government in the Complete Engineering Design Handbooks: Fuse Shock and Vibration Design Handbook, Vol. I; Rotorcraft and Light Aircraft Qualification Rotorcraft and Light Aircraft Qualification 6 - SBIR/STTR - C - Revised economic assumption not available for execution Total 278	change of da Vol. I; Roto Qualificatio ion not avail:	ta between ii rcraft and Li n able for exec	ndustry and ght Aircraft ution	government Qualificatio	in the Comț m; Documen	olete Enginer Itation of Ele	ering Design ectronic Syst	n Handbook: tems; Desig	s: Fuse Shoc n for Project	k and ion;
FY 1997 Planned Program: Project completed in FY 96.	FY 96.									
Project M731			Page 14 o	Page 14 of 17 Pages			Exhi	bit R-2 (PE	Exhibit R-2 (PE 0605803A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605803A Tech	ND TITLE A Technical Information Activities	PROJECT NT31
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	FY 1995 279 273 -123 280 -2	<u>FY 1997</u> 543 -543	
Current Budget Estimate Submit for FY 1997	150 278	0	
Project M731	Page 15 of 17 Pages 1228		Exhibit R-2 (PE 0605803A)





RDT&E BUDGET ITEM JUS	SUL ME	TIFICA"	TION SH	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605803A Tech	PE NUMBER AND TITLE 0605803A Technical Information Activities	Informa	tion Acti	vities	id N	PROJECT M733
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M733 Acquisition Technology Act	370	0	2180	2170	2161	2156	2138	•	Continuing Continuing	Continuing

acquisition process improvement through the application of decision support and expert information systems. This project provides funds to conduct analysis and evaluation and Army Ballistic Missile Defense. This project also provides an environment for the analysis and evaluation of new information technologies, concepts and applications in of alternative acquisition strategies using techniques such as Value-Added Analysis. Supports integrated management activities such as Horizontal Technology Integration support of the Army acquisition community's dynamic requirements and for the engineering of Army acquisition process improvement through the application of decision A. Mission Description and Budget Item Justification Project M733 - Acquisition Technology Activities (ATA): This project provides for the engineering of Army support and expert information systems.

FY 1995 Accomplishments:

370 Conducted special studies on program integration issues and provided Congressional Issues Analysis. Initiated programmatic requirements analysis 370

FY 1996 Planned Program: Program not funded in FY 1996

FY 1997 Planned Program:

- Develop a simulation and logical modeling test and evaluation environment that provides a prototype development tool in support of technology based initiatives
- Design application program and user interface utilities for executive level information systems that offer Standard Query Language (SQL) services to AAC corporate and global data bases
 - Allocation Analysis, Cost Tracking and Analysis, Cost-effectiveness Analysis and Data Base Management/Financial Analysis, SAR Technology Handbook, Analytic/Technical Support for Army Science and Technology Programs, Long-Range Planning and Policy Analysis, Resource - Continue analysis of acquisition program financial programming and budgeting requirements. Initiate development of Weapon Systems Application Concept Research/Analysis

Total 2180

1229

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Project M733

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET		DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605803A Tech	Technical Information Activities	ties M733
B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996) Adjustment to FY 1996	EX 1996 2239 -2239	FY 1997 2240	
Adjustments to Budget Year (FY 1997) since FY 1996 Presidents Budget Current Budget Estimate Submit for FY 1997	0	-60 2180	
Project M733	Page 17 of 17 Pages		Exhibit R-2 (PE 0605803A)

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	RDT&E BUDGET ITEM JUS	EM JUS		TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE M	March 1996	9
8UDG 6 - 1	вирсет Астіvіту 6 - Management Support			PE NI 060 Eff	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	กนะ funitions เร and Sa	Standar sfety	dization			
	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
	Total Program Element (PE) Cost	14015	17608	2282	6136	5995	6577	6538		Continuing	Continuing
DF21	North Atlantic Treaty Organization (NATO) Small Arms Evaluation	314	278	280	278	275	275	280		Continuing	Continuing
DF24	DF24 Conventional Ammunition Demilitarization	7937	16459	731	4609	4589	4731	4699		Continuing	Continuing
D293	Field Artillery Ammunition (NATO) Engineering Development	274	267	0	0	0	0	0		0	834
D620	DOD Munitions Effectiveness	4860	0	0	0	0	0	0		0	189150
M296	M296 Pyrotechnic Reliability and Safety	0	0	682	629	579	292	761		Continuing	Continuing
M857	M857 Explosive Safety Standards	630	604	589	570	552	805	798		Continuing	Continuing

evaluation and quantification of DOD munitions via the DOD Explosives Safety Board. Pyrotechnic Reliability and Safety (Project M296) is a new start for FY 1997. The Mission Description and Budget Item Justification: This program supports a continuing technology investigation. It provides a coordinated Tri-Service mechanism for (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization environment. It provides for NATO interchangeability testing; joint munitions effectiveness manuals used by all services; development of standardization agreements the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear munitions and weapons systems in a realistic operational methods for existing conventional ammunition; evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and safety and hazard projects in this Program Element support studies and analyses of numerous Army and Joint-Services program and are correctly placed in Budget Activity 6.

Page 1 of 11 Pages

	RDT&E BUDGET IT	TEM JUST	TIFICA.	TON ST		FICATION SHEET (R-2 Exhibit)	916)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support	t Support			PENU 060 Effe	PENUMBERAND TITLE 0605805A Mun Effectiveness a	PENUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	Standar Ifety	dization		O. 1	PROJECT DF21
00	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DF21 North Atlantic Tre Arms Evaluation	North Atlantic Treaty Organization (NATO) Small Arms Evaluation	314	278	280	278	275	275	280		Continuing	Continuing
A. Mission Descripti weapons among all N of NATO STANAGS	A. Mission Description and Budget Item Justification: This program assures complete interchangeability of small caliber and automated cannon-caliber ammunition and weapons among all NATO countries with all of the associated logistic, strategic and tactical advantages. Project involves development, maintenance and testing compliance of NATO STANAGS and staffing of the NARTC.	ation: This associated k	program ass gistic, strate	ures complet gic and tacti	te interchang cal advantag	geability of siges. Project i	mall caliber involves dev	and automal elopment, rr	ted cannon-a naintenance	caliber ammu and testing o	nition and ompliance
FY 1995 Accomplishments:	Iments: Continued to staff, equip, and maintain the NARTC for 5.56mm and 7.62mm Initiated NATO qualification testing for 5.56mm and M856 ammunition Continued to maintain standardization of previously qualified calibers, including 25mm	maintain th testing for 5 dization of	SNARTC fc 56mm and by reviously q	ARTC for 5.56mm and 7.62mm mm and M856 ammunition viously qualified calibers, includ	nd 7.62mm nition vers, includii	ıg 25mm					
• 72 • 92 Total 314	Established pressure limits for the 6215 pressure transducer for use in testing of previously qualified ammunition designs, including 25mm Evaluations of environmentally friendly testing methodology (alternate Mercurous Nitrate Test Procedure)	r the 6215 p ly friendly t	essure trans	ducer for use dology (alter	e in testing c rnate Mercu	of previously rous Nitrate	qualified an Test Proced	nmunition d ure)	esigns, inclu	ıding 25mm	
FY 1996 Planned Program: • Implem	ogram: Implement the use of the 6215 pressure transducer for all NATO standardization testing, including 25mm	5 pressure t	ansducer fo	r all NATO s	standardizati	on testing, ir	ncluding 25r	ши			
55 70	Continue to staff, equip and maintain the NARTC for 9mm, 5.56mm, and 7.62mm only Continue to maintain standardization of previously qualified calibers, including 25mm Locarousts use of new environmentally safe test method as an alternate to current hazardous procedures	naintain the lization of p	NARTC for reviously quality test methods	9mm, 5.56m alified calibe	im, and 7.62 ers, includin	mm only g 25mm	ns procedure	,			
	Incorporate use of new environmentary safe test incurou as an architect to current fazar usus procedures. Complete qualification testing of 5.56mm, M856 Trace ammunition Eugh mill be used for SBID/STTR programs IAW the Small Rusiness Innovation Research Program Reauthorization Act of 1992	g of 5.56mm	, M856 Trac	1856 Trace ammunition	anate to cur on ness Innoval	ion Research	us procedur	eauthorizati	on Act of 19	992	
	Revised economic assumption- not available	n- not availa	ble for execution	ution			i in Find			1	
Total 2/8											
FY 1997 Planned Program: • 60 Continu • 80 Continu	rogram: Continue to staff, equip and maintain the NARTC for 9mm, 5.56mm and 7.62mm only Continue to maintain standardization of previously qualified calibers, including 25mm	naintain the dization of p	NARTC for reviously qu	9mm, 5.56rr alified calibe	nm and 7.62 ers, includin	mm only g 25mm					
• 140 Total 280	Other activities, including Partners in Peace	rtners in Pez	ce initiatives	s							
Project DF21				Page 2 of 11 Pages	11 Pages		the section of the se	Exhik	oit R-2 (PE	Exhibit R-2 (PE 0605805A)	dzonowanie wyska zające na warze





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (DATE March 1996
вирдет АСТІУІТҮ 6 - Management Support	PE NUMBER AND TITLE 0605805A Muni Effectiveness at	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT DF21
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) 314	EY 1996 286	EY 1997 284	,
Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	281 -3	4-	
FY 1996 President's Budget Current President's Budget Submit	278	280	
Change Summary Explanation: Funding: FY 1996: This program has been reduced for revised economic assumptions.	omic assumptions.		
	Page 3 of 11 Pages	EXPIR	Exhibit R-2 (PE 0605805A)
Project DF21	1065 20/11 1065		

RDT&E BUDGET ITEM JUST		3	S	FICATION SHEET (R-2 Exhibit)	k-2 Exhi	oit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI	PENUMBER AND TITLE 0605805A Munitions Standardization	TITLE Aunitions	Standar	dization			PROJECT DF24
				Effectiveness and Safety	ss and Sa	lfety				
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DF24 Conventional Ammunition Demilitarization	7937	16459	731	4609	4589	4731	4699		Continuing	Continuing Continuing

environmentally acceptable alternatives to open burning/open detonation (OB/OD) for recovery/recycle/reclamation equipment and processes to reduce the extremely large A. Mission Description and Budget Item Justification: This project supports a continuing technology evaluation of demilitarization methods for existing conventional ammunition and conventional ammunition recovered from formerly used defense sites (FUDS). It will complete the development and demonstration of new, safe, and stockpile of munitions in the resource recovery disposition account and recovered munitions from FUDS.

successful demonstration/validation, the design specifications and prototype will be made available to the Industrial Operations Command Ammunition Peculiar Equipment ordnance and related items. To accomplish this, a continuation of concept design, prototype procurement, installation, and prove-out is required. Upon completion of a Acquisition Strategy: The plasma arc furnace program is designed to demonstrate/validate a prototype furnace system for the demilitarization of small pyrotechnic (APE) program office for acquisition planning actions.

FY 1995 Accomplishments:

FY 1996 Planned Program:

20 Supercritical water oxidation of carcinogenic/toxic colored smokes and dyes	10472 Development of plasma arc furnace system for demilitarization of pyrotechnic ordnance	880 Development of explosives rework process for cast-loaded munitions
• 292	• 1047	88
	i ing te h	anteis

- Cryofracture demilitarization for explosives-loaded small munitions Development of a real-time metal emissions monitoring system 554
- Development of a high pressure CO2 blastout system for removal of press-loaded explosives 147
 - Conversion of CS (tear gas) to saleable products via hydrolysis

Project DF24

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605805A Muni Effectiveness al	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT DF24
 FY 1996 Planned Program: (continue) 125 Develop advanced prototype energetic materials removal technology 365 Funds will be used for SBIR/STTR programs IAW the Small Business Innovation Program Reauthorization Act of 1992 46 Revised economic assumption- not available for execution 16459 	echnology all Business Innov	ation Program Reauthorization Act of 1992	
 FY 1997 Planned Program: 157 Complete testing and evaluation of production prototype SCWO system for demilitarization of colored smokes and dyes 140 Continue cryoffracture demilitarization 263 Rework of cast-loaded explosives recovered from demilitarization operations 171 Complete prove-out of the production prototype plasma arc furnace system for demilitarization of small pyrotechnic ordnance Total 	CWO system for d rization operations c furnace system fo	demilitarization of colored smokes and dyes s or demilitarization of small pyrotechnic ordnance	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	FY 1996 5722	FY 1997 748	
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	16626	-17	
FY 1990 President's Budget Submit	16459	731	
Change Summary Explanation: Funding: FY 1996: This program has been reduced for revised economic assumptions. FY 1997: This program has been reduced for revised economic assumptions.	c assumptions. c assumptions.		
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Project DF24	Page 5 of 11 Pages 1235	Exhibit R-2 (PE 0605805A)	805A)
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	EM JUS		SNO	FICATION SHEET (R-2 Exhibit)	2-2 EXPI	Dit)		DATE	March 1996	9
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TITLE				<u> Д</u>	PROJECT
6 - Management Support			090	0605805A Munitions Standardization	Aunitions	Standa	rdization		hand	D293
			Ä	Effectiveness and Safety	s and S	afety				
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	997 FY 1998 FY 1999 late Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D293 Field Artillery Ammunition (NATO) Engineering Development	274	267	0	0	0	0	0		0	834

A. Mission Description and Budget Item Justification: This project supports US/NATO howitzer and ammunition Rationalization, Standardization, Interoperability, and Compatibility.

FY 1995 Accomplishments:

- 214 Engineering support 50 Interoperability testing 10 Translation and interpretation 274
- Total

FY 1996 Planned Program:

- Engineering support
- Interoperability testing 184 66 10
- Translation and interpretation
- Funds will be used for SBIR/STTR programs IAW the Small Business Innovation Research Program Reauthorization Act of 1992
 - Revised economic assumption- not available for execution
 - Total

FY 1997 Planned Program: No planned program. Program terminated.

Page 6 of 11 Pages

Project D293





RDT&E BUDGET ITEM JUSTIFICA	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibit)	DATE March 1996
вирдет АСТІМІТУ 6 - Management Support	PE NUMBER AND TITLE 0605805A Muni Effectiveness at	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT D293
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1996 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	995 FY 1996 280 274 274 0 269 -2	FY 1997 271 -271	
Change Summary Explanation: Funding: FY 1996: This program has been reduced for revised economic assumptions. FY 1997: Funds were reduced because the program was terminated.	म revised economic assumptions. program was terminated.		
	Page 7 of 11 Pages		Exhibit R-2 (PE 0605805A)

RDT&E BUDGET ITEM JUSTI		S	S S S S S S S S S S S S S S S S S S S		FICATION SHEET (R-2 Exhibit)	bit)	and the second s	DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PEN 060	PE NUMBER AND TITLE 0605805A Mun Effectiveness a	PENUMBER AND TITLE OCCUSSOSA Munitions Standardization Effectiveness and Safety	Standar Ifety	dization			PROJECT D620
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D620 DOD Munitions Effectiveness	4860	0	0	0	0	0	0		0	189150
A. Mission Description and Budget Item Justification: Develops Joint Munitions Effectiveness Manuals (JMEMs) which provide weapon/munitions effectiveness predictions for operational non-nuclear ordnance employed by the Services. Manages joint Services efforts to improve the analytical methodology and data base used to determine the effectiveness of non-nuclear weapons systems. Promotes standardized procedures for parameters associated with munitions effectiveness. Conducts special studies to determine the effectiveness of non-nuclear munitions systems. Develops air-to-air, surface-to-surface, and anti-air weapons effectiveness, environmental effects, and target vulnerability for all types of munitions. Project includes collection, collation, storage, and dissemination of combat data.	cation: Devemployed by the systems. Pract munitions	lops Joint Me Services. Smotes stansystems. De es collection	Aunitions Ef Manages jo dardized pro evelops air-ti	fectiveness lint Services ocedures for o-air, surfaces tor storage, and	Develops Joint Munitions Effectiveness Manuals (IMEMs) which provide weapon/munitions effectiveness by the Services. Manages joint Services efforts to improve the analytical methodology and data base used s. Promotes standardized procedures for parameters associated with munitions effectiveness. Conducts spetions systems. Develops air-to-air, surface-to-surface, and anti-air weapons effectiveness, environmental effection, collation, storage, and dissemination of combat data.	EMs) which prove the ansessociated wifand anti-air.	provide wes alytical meth th munitions weapons eff data.	apon/munitionodology an effectivene ectiveness, e	ons effective d data base u ss. Conducts	ess sed to special il effects,
 FY 1995 Accomplishments: 425 Standardize development of prototype CD/ROM system for the automation of JMEMs 622 Develop methodologies and models for assessment of damage to hardened bunker/aircraft targets and crew casualties 622 Develop data for Smart Weapon Analysis Workstation, Special Operations Planning and Requirements System. Attack Planning System 2913 Maintain/update a library of JMEMs and reports for the Services/JCS/JLC/CINCs/MACOMs/Unified Commands Total 4860 	prototype CE models for as npon Analysis JMEMs and	/ROM syste sessment of Workstation eports for th	em for the au damage to l n, Special Oj he Services/J	ntomation of nardened bu perations Pla ICS/JLC/CII	JMEMs nker/aircraft anning and R NCs/MACON	targets and c equirements As/Unified C	rew casualti System, anc Commands	es I the Aircraf	t Loading an	d Target
FY 1996 Planned Program: No FY 1996 planned program.	d program.									geografige a workshall and Artist 2 and 2 and
FY 1997 Planned Program: No FY 1997 planned program.	d program.									
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995		FY 1995 4958 4860 0	•	EY 1996 0	FY 1997 0					
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since				00	0					
FY 1996 President's Budget Current President's Budget Submit		4860	09	0	0					
Project D620			Page 8 of	Page 8 of 11 Pages	And the second s		Exhit	oit R-2 (PE	Exhibit R-2 (PE 0605805A)	E PROPERTY OF THE PROPERTY OF
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SUL METER BILIDGET ITEM .IUS	SIII. MH	TIFICA.	IS NOIL	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	oit)		DATE	March 1996	
BUDGET ACTIVITY 6 - Management Support			9E NI 060 Eff	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	ITLE Iunitions ss and Sa	Standar fety	dization			PROJECT
COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M296 Pyrotechnic Reliability and Safety	0	0	682	629	629	766	761		Continuing	Continuing
A. Mission Description and Budget Item Justification: New start in FY 1997. This project will support pyrotechnic research, development and testing to identify, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics, including training realism Project will result in the development and demonstration of new safe, reliable and environmentally acceptable munitions.	ation: New s nd manufactu ation of new	tart in FY 1 ring issues (afe, reliable	997. This phat impact I and enviro	start in FY 1997. This project will support pyrotechnic r rring issues that impact production availability and field safe, reliable and environmentally acceptable munitions.	ipport pyrote vailability an ceptable mu	chnic resear d field use o itions.	ch, developi f pyrotechni	nent and tes ics, including	This project will support pyrotechnic research, development and testing to identify, npact production availability and field use of pyrotechnics, including training realist environmentally acceptable munitions.	fy, lism.
FY 1995 Accomplishments: No FY 1995 program.	ei:									
FY 1996 Planned Program: No FY 1996 program.	Ė									
FY 1997 Planned Program: 195 Initiate development of safer pyrotechnic munitions/systems (i.e., simulators, flares, igniters) 97 Initiate development of alternative materials and designs for munitions/systems utilizing magnesium 195 Initiate development of materials and process changes to preclude magnesium moisture reaction and hydrogen generation 195 Initiate technology determination for shelf life of pyrotechnics Total 682	pyrotechnic) native materië rials and proc ation for shelf	nunitions/sy Is and desig ess changes 'life of pyro	stems (i.e., ns for munii to preclude technics	simulators, f tions/systems magnesium	lares, igniters s utilizing me moisture rea	s) gnesium ction and hy	drogen gene	ration		
B. Project Change Summary: Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)		EY 1995 0 0 0		FY 1996 0	FY 1997 0					
Adjustment to FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since				0 0	682					
FY 1996 President's Budget Current President's Budget Submit			0	0	682					
Change Summary Explanation: Funding: FY 1997: New start.										
Project M296			Page 9 of	Page 9 of 11 Pages			Exhik	Exhibit R-2 (PE 0605805A)	0605805A)	

	RDT&E BUDGET IT	ITEM JUST		FICATION SHEET		(R-2 Exhibit)	bit)		DATE	March 1996	
BUDGET ACTIVITY 6 - Management Support	nt Support			PENU 060 Effe	PE NUMBER AND TITLE 0605805A Munitio Effectiveness and	TITLE Nunitions is and Sa	PENUMBER AND TITLE OF Standardization Sterice Munitions Standardization Effectiveness and Safety	dization		ā A	PROJECT W857
O	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M857 Explosive Safety Standards	ly Standards	630	604	589	570	552	805	798		Continuing	Continuing
A. Mission Description: hazards in all DOD manu development and improve hazard/protection criteria.	A. Mission Description and Budget Item Justification: Supports explosives effects research and testing to quantify hazards and to develop techniques to mitigate these hazards in all DOD manufacturing, testing, transportation, maintenance, storage and disposal of ammunition, and explosives operations. Results are essential to the development and improvement of quantity-distance standards, hazard classification procedure, cost effective explosion-resistant facility design procedures, and personnel hazard/protection criteria.	ition: Suppo ation, mainte standards, ha	rts explosiv nance, stora zard classifi	es effects res ige and dispo cation proce	search and to ssal of ammi dure, cost ef	esting to qua unition, and fective expl	ntify hazards explosives o osion-resista	and to deve perations. R nt facility de	elop techniquesults are es	explosives effects research and testing to quantify hazards and to develop techniques to mitigate these nce, storage and disposal of ammunition, and explosives operations. Results are essential to the rd classification procedure, cost effective explosion-resistant facility design procedures, and personnel	e these
FY 1995 Accomplishments: • 210 Collect	collected and analyzed data from 105mm projectiles and 81mm mortars in the open, and 105mm projectiles in an earth-covered magazine. Data to be	rom 105mm	projectiles a	nd 81mm m	ortars in the	open, and 1	05mm projec	ctiles in an e	arth-covered	1 magazine.	Data to be
180	used to revise 111-services and 1941O hazards interpretation of mazards Division 1.2 annimination insuce and outside surgicuses. Developed improved Tri-Services design procedures for explosion-resistant structures that included improved procedures for reinforced steel	ices design	rocedures for	or explosion	resistant str	uctures that	included imp	o alla outsia proved proce	e su uctures edures for re	inforced stee	
09	Collected thermal characterization data for several energetic materials, including ammonium nitrate and ammonium perchlorate. Developed modified Polster fixture to improve collection of decomposition data for metal-loaded explosives	ation data for	several ene	rgetic mater	ials, including the formetal-	ng ammoniu Joaded expl	m nitrate and osives	l ammonium	ı perchlorate	. Developed	æ
180	Conducted other hazards analyses and prepared improved DOD guidelines for munitions storage facilities. Conducted study on the quantity-distance criteria for small quantities in hardened aircraft that resulted in a change to DOD 6055.9-STD. Other studies included a review of risk-based	lyses and pre-	craft that re	ved DOD gu sulted in a cl	idelines for hange to DC	munitions st D 6055.9-S7	orage faciliti ID. Other st	ies. Conduc udies includ	ted study on led a review	the quantity of risk-based	distance
Total 630	appidaciics tot explosives sa	מול מוות מוכל			r to seed and	mph Suum					
FY 1996 Planned Program:	rogram:										
• 170	Collect and analyze data for revising Tri-Services and NATO hazard interpretations for Hazard Divisions 1.2, and 1.6 ammunition outside and inside	evising Tri-S	ervices and	NATO haza	ard interprets	tions for Ha	zard Divisio	ns 1.2, and 1	l.6 ammunit	ion outside ar	d inside
120	structures Develop improyed Tri-Services design procedures and improved computer codes for explosion-resistant structures	es design pro	cedures and	l improved c	omputer coc	les for explo	sion-resistan	it structures			
50	Develop improved explosives and munitions	s and munitic	ns tests and	tests and collect characterization data	acterization	data					
208		lelines for m	tor	torage facilities	S. C. C. J. A. L. L.	!					
40	Conduct other hazards analyses and expand/automate explosives sately databases Finds will be used for SBIR/STTR programs IAW the Small Business Innovation Research Program Reauthorization Act of 1992	es and expai	d/automate ms IAW the	explosives s	alety uataoa ness Innoval	ses ion Researcl	n Program R	eauthorizati	on Act of 19	192	
2	Revised economic assumption- not available	n- not availal	le for execution	ıtion			0				
Total 604											
Project M857	The second secon		E. Landers I. Langers and J. Landers	Page 10 of 11 Pages	'II Pages	Mastelling on special and accoming of finish		Exhib	Exhibit R-2 (PE 0605805A)	0605805A)	Appendix to the second section of the second





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	(-2 Exhibit)	DATE March 1996
вирбет АстіVіTY 6 - Management Support	PE NUMBER AND TITLE 0605805A Muni Effectiveness at	PENUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT M857
 FY 1997 Planned Program: 189 Collect and analyze data for revising DOD and NATO hazard interpretation for Hazard Divisions 1.1, 1.3, 1.4, and 1.6 ammunition outside and inside structures 120 Develop improved Tri-Services design procedures and improved computer codes for explosion-resistant structures 50 Develop improved explosives and munitions tests and characterization data 186 Develop improved DOD guidelines for munitions storage facilities 44 Conduct other hazards analyses and expand/automate explosives safety data bases Total 589 	d interpretation for oved computer cod cterization data cilities sives safety data ba	r Hazard Divisions 1.1, 1.3, 1.4, and les for explosion-resistant structures ises	1.6 ammunition outside and inside
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	FY 1996 621	FY 1997 605	
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget	610 -6	-16	
Current President's Budget Submit	604	589	
Change Summary Explanation: Funding: FY 1996: This program has been reduced for revised economic assumptions. FY 1997: This program has been reduced for revised economic assumptions.	assumptions. assumptions.		
Project M857 Page	Page 11 of 11 Pages	Exhit	Exhibit R-2 (PE 0605805A)
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RDT&E BUDGET ITEM JUST			FICATION SHEET (R-2 Exhibit)		-2 Exhi	oit)		DATE	March 1996	ശ
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605853A Envi	ITLE Invironm	7E NUMBER AND TITLE 0605853A Environmental Conservation	servatio	L		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	2464	1759	775	1820	2150	1769		Continuing	Continuing
M0CC Environmental Conservation - AMC Test Ranges	0	2261	1498	658	1700	1884	1645		Continuing	Continuing
M1CC Environmental Conservation - AMC Major Subordinate Commands/Laboratories	0	10	115	117	120	122	124		Continuing	Continuing
M5CC Environmental Conservation - USASSDC	0	193	146	0	0	144	0		0	0

deficiencies where a statutory or regulatory deadline has passed; Class II - projects required to comply with an established natural or cultural resource standard, and deadline appearance, including landscaping, or normal building maintenance associated with present day, non-cultural uses of historic buildings. Army defines environmental effort conservation efforts at RDTE facilities. It focuses on compliance with natural and cultural resource laws and on responsible management of natural and cultural resources Management; preparation of natural and cultural resource management plans; design, construction, maintenance or repair costs specifically required to restore, improve or Mission Description and Budget Item Justification: This program ensures that resources are available to fund actions specifically required to protect or enhance natural environmental laws; correct deficiencies cited in an inspection or notice of violation by a natural or cultural resource regulatory agency, or host nation equivalent; correct to ensure resources are used wisely and are protected. It finances studies and surveys to identify, inventory, and manage natural (endangered or threatened species, other and cultural resources, preserve access to improved and unimproved training areas, and make necessary repairs to minimize erosion and otherwise rehabilitate lands and for compliance is in the future; Projects M0CC and M1CC were realigned from Program Element 0605856A. Project M5CC was realigned from 0605301A. Includes appropriated RDTE funds attributable to fish, wildlife, agricultural outleasing and timber management activities. It does not include normal maintenance required for wildlife, timber, agricultural lands, training areas, etc.) and cultural resources and evaluation of the resources so identified and inventoried; Integrated Training Area waters at Army RDTE installations, laboratories and test ranges. No Operation and Maintenance, Army (OMA) appropriation funds are budgeted for environmental effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6. maintain natural or cultural resources; supplies and equipment required to carry out applicable natural and cultural resources management activities. It includes as: Class I - support compliance with legally binding agreements or judgments under applicable Federal, State, local or host nation natural or cultural resource

Page I of 6 Pages





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SE	IEET (R	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9(
BUDGET ACTIVITY 6 - Management Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605853A Envir	TITLE Invironm	ental Co	PE NUMBER AND TITLE OGO SERVATION OGO 5853A Environmental Conservation	E	a e	PROJECT MOCC
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0CC Environmental Conservation - AMC Test Ranges	0	2261	1498	658	1700	1884	1645		Continuing	Continuing Continuing
	_				And in case of the	Activities and a second second				

White Sands Missile Range (WSMR), NM. The operations are critical to the infrastructure and execution of the Army testing mission. Improper management of natural cultural resource management requirements, at Yuma Proving Ground (YPG), AZ, Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and A. Mission Description and Budget Item Justification: Project MOCC resources in this project ensure an adequate level of funding for environmental natural and and cultural resources at these installations could shut down the test mission.

FY 1995 Accomplishments: Project funded under PE 0605856A.

FY 1996 Planned Program:

- Fund Class I and Class II environmental natural and cultural resource management programs such as, management/protection of endangered species, preparation of historic preservation plans, and preservation of historic sites and wetlands management/studies and shoreline erosion.
 - Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)
- 16 Revised Economic Assumption not available for execution

Total 2261

FY 1997 Planned Program:

- 1498 Fund Class I and Class II environmental natural and cultural resource management programs such as management/protection of endangered species, and preservation of cultural resources according to the historic preservation plans.
 - Total 1498

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TON SHEET	DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605853A Envi	ND TITLE Environmental Conservation	PROJECT
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	EX	FY 1997 1539	needona maagan kaada ahaan ka muuruu ka
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	2283	-41	
FY 1996 President's Budget Current President's Budget Submit	0 2261	1498	
Project M0CC	Page 3 of 6 Pages	Exhibit R-2 (PE 0605853A)	.0605853A)

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RDT&E BUDGET ITEM JUST	LEM JUS	TIFICA.	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	6
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605853A Envil	ritle nvironm	ental Co	PE NUMBER AND TITLE 0605853A Environmental Conservation	ء	d Z	PROJECT M1CC
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1CC Environmental Conservation - AMC Major Subordinate Commands/Laboratories	0	10	115	117	120	122	124		Continuing	Continuing Continuing

cultural resource management requirements, as discussed in paragraph A, at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, Dover, NJ; Soldier Systems Command (SSC), formerly, Natick Research, Development and Engineering Center A. Mission Description and Budget Item Justification: Project M1CC resources in this project ensure an adequate level of funding for environmental natural and (NRDEC), Natick, MA.

FY 1995 Accomplishments: Project funded under 0605856A.

FY 1996 Planned Program:

- 10 Fund Class I and Class II environmental natural and cultural resource management programs such as survey of critical habitats and species to assess potential existence of threatened/endangered species on installations.
 - Total 10

FY 1997 Planned Program:

- 115 Fund Class I and Class II environmental natural and cultural resource management programs such as required surveys of historical buildings and
 - preservation of the building.
- Total 11

Page 4 of 6 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	S S S S S S S S S S S S S S S S S S S	DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605853A Envi	ND TITLE Environmental Conservation	PROJECT M1CC
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) A dinstancate to FY 1995	FY 1996 10	FX 1997 10	
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	10	+105	
	0 10	115	
Project M1CC	Page 5 of 6 Pages	Exhibit R-2 (PE 0605853A)	853A)
	17.46		





RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	IS NOI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605853A Envi	этпе Environmental Conservation	ental Co	nservati	uc	a 2	PROJECT M5CC
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M5CC Environmental Conservation - USASSDC	0	193	146	0	0	144	0		0	0
A. Mission Description and Budget Item Justification: Project M5CC Environmental Conservation - U.S. Army Space and Strategic Defense Command (USASSD): Resources in this project ensure an adequate level of funding for environmental natural and cultural resource management requirements, at USASSDC. Funds for this project were realigned from PE 0605301A in FY 1996 - FY 2001.	cation: Projec of funding for 1996 - FY 200	st M5CC Enrenvironmen 11.	vironmental tal natural a	Conservatio	n - U.S. Arm esource man	ry Space and agement req	l Strategic L luirements, a	befense Com nt USASSDC	ımand (USAS C. Funds for t	(SD): his
FY 1995 Accomplishments: Project funded under 0605301A.	· 0605301A.									
 FY 1996 Planned Program: 188 Develop an Historic Preservation Plan for management of languages 4 SBIR/STTR 1 Revised Economic Assumption not available for execution Total 193 	ation Plan for ion not availa	managemen ble for execu	t of historic ıtion	management of historic properties to comply with National Historic Preservation Act.	o comply wit	h National F	listoric Pres	ervation Act	ن	
FY 1997 Planned Program:	istoric Preserv	ation Plan fc	и managem	ent of histori	ic properties	to comply w	ith Nationa	l Historic Pr	eservation Ac	÷÷
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)		FY 1995		F <u>Y 1996</u> 199	FY 1997 100					
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996				195 -2						
Adjustments to Budget year (FY 1997) since					+46				•	
Fr 1990 President's Budget Submit			0	193	146					

Project M5CC

Exhibit R-2 (PE 0605853A)

RDT&E BUDGET ITEM JUST		TEGE	S		IFICATION SHEET (R-2 Exhibit)	oit)		DATE M	March 1996	6
BUDGET ACTIVITY 6 - Management Support	STATE OF THE STATE		PE NL 060	PE NUMBER AND TITLE 0605854A POIL	IITLE Ollution	ve NUMBER AND TITLE OG05854A Pollution Prevention	50			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	12652	13894	4384	4038	9171	2320		Continuing	Continuing
M0PP Pollution Prevention - AMC Test Ranges	0	3398	546	0	1217	908	815		Continuing	Continuing
M1PP Pollution Prevention - AMC Major Subordinate Commands/Laboratories	0	260	143	121	121	120	119		Continuing	Continuing
M5PP Pollution Prevention - USASSDC	0	2855	1957	1371	685	584	532		Continuing	Continuing
M7PP Pollution Prevention - ODC Elimination	0	1976	799	0	0	6701	0		Continuing	Continuing
M8PP Pollution Prevention - Acquisition Pollution Prevention	0	4163	10449	2892	2015	861	854		Continuing	Continuing

Planning/Community Right-to Know Act, and the other requirements of Executive Order 12856. Projects MOPP and MIPP were realigned from PE 0605856A. M7PP and or regulatory deadline has passed; Class II - projects required to comply with an established standard, and deadline for compliance is in the future; Class III - other pollution environmental laws; correct deficiencies cited in an inspection or notice of violation by a regulatory agency, or host nation equivalent; correct deficiencies where a statutory M8PP were realigned from Program Element 0605801A. Project M5PP was realigned from 0605301A. (This is a zero sum transfer within Army) Includes effort directed reduce or eliminate (rather than control or treat) the future impact on operational readiness or that an operation may have on the environment (including impacts to the air, surface and ground waters, vegetation and soils) through the source reduction of pollutants, more efficient use of natural resources, recycling, and/or reduced emissions of cleaning agents and solvents; and the Army Acquisition Pollution Prevention program to reduce requirements for the procurement of toxic chemicals, including review of alternatives to the use of ozone depleting chemicals in combat vehicle fire protection systems, as cooling agents in Army unique cooling and refrigeration systems, and as environmental pollution prevention program. It finances pollution prevention efforts at Army RDTE installations, laboratories and test ranges; prove-out/engineering of Mission Description and Budget Item Justification: This program ensures that resources are available to fund the non-research portion of the Army's RDTE funded manufacturing practices, revision of procurement practices and revisions of the Federal Acquisition Regulations. Pollution prevention is any action that is designed to toxic and other undesirable materials or wastes to the environment. No Operations and Maintenance, Army (OMA) funds are programmed for these purposes. Army standardized documents containing these requirements, prove out/engineering of alternative chemicals and processes, revision of standardized documents revision of prevention projects, but where non-compliance is not imminent. Included as Class I and II are projects to comply with the Pollution Prevention Act, the Emergency defines environmental effort as: Class I - support compliance with legally binding agreements or judgments under applicable Federal, State, local or host nation loward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605854A)







RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	မွ
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605854A Pollu	PE NUMBER AND TITLE OCO5854A Pollution Prevention	Preventi	no		4 Z	PROJECT MOPP
COST (in Thousands)	FY 1995 Actual	FY 1996 · Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0PP Pollution Prevention - AMC Test Ranges	0	3398	546	0	1217	902	815		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project MOPP - Pollution Prevention - AMC Test Ranges: Resources in this project ensure an adequate level of funding for pollution prevention requirements, at Yuma Proving Ground (YPG), AZ; Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and White Sands Missile Range (WSMR), NM. These operations are critical to the infrastructure and execution of the Army testing mission.

FY 1995 Accomplishments: Program funded in Program Element 0605856A.

FY 1996 Planned Program:

Fund Class I, Class II and Class III pollution prevention projects such as conduct and reporting of Toxic Release Inventories, solid and hazardous waste reduction programs, implementation of storm water pollution prevention plans, purchase of spill response supplies and equipment, etc. Small Business Innovation Research (SBIR/Small Business Technology Transfer (STTR) Revised Economic Assumption not available for execution 76 24 3398 Total

FY 1997 Planned Program:

546 Fund Class I, Class II and Class III pollution prevention projects such as reporting of Toxic Release Inventories, solid and hazardous waste reduction programs, implementation of storm water pollution prevention plans, purchase of spill response supplies and equipment, etc. 546 Total

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY 1996)	0	3493	3215	
Appropriated Amount (FY 1995)				
Adjustments to FY 1995				
Appropriated Amount (FY 1996)		3432		
Adjustments to FY 1996		-34		
Adjustments to Budget year (FY 1997) since			-2669	
FY 1996 President's Budget				
Current President's Budget Submit	0	3398	546	
Project M0PP	Pag	Page 2 of 7 Pages		Exhibit R-2 (PE 0605854A)

BUDGET ACTIVITY 6 - Management Support COST (In Thousands) FY 1995 FY 1996 FY 1996 FY 1996 FY 1996 FY 1997 FY 1998 FY 1997 FY 1998 FY 1997 FY 1998 FY 1	FICATION SHEET (R-2 Exhibit)		March 1996	966
ent Support COST (In Thousands) FY 1995 FY 1996 FY 1996 Actual Estimate Estimate wention - AMC Major Subordinate 0 260	AND TITLE			PROJECT
FY 1995 FY 1996 FY 1997 FY 1997 Actual Estimate Estimate Estimate rdinate 0 260 143	0605854A Pollution Prevention	revention		2
0 260 143	998 FY 1999 ate Estimate	FY 2000 FY 2001 Estimate Estimate	Cost to Complete	o Total Cost
Commands/Laboratories	121 121	120 119		Continuing Continuing

and Engineering Center (ARDEC), Picatinny Arsenal, Dover, NJ; Soldier Systems Command, formerly, Natick Research, Development and Engineering Center (NRDEC), project ensure an adequate level of funding for pollution prevention requirements, at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development A. Mission Description and Budget Item Justification: Project M1PP - Pollution Prevention - AMC Major Subordinate Commands/Laboratories: Resources in this Natick, MA; and Army Research Laboratory Materials Technology Directorate (ARLMTD), APG, MD.

FY 1995 Accomplishments: Program funded in Program Element 0605856A.

FY 1996 Planned Program:

Revised Economic Assumption not available for execution 2 260

Total

FV 1997 Planned Prooram:

147 FY 1997 267 FY 1996 FY 1995 Previous President's Budget (FY 1996) B. Project Change Summary 143 Total

7 262 -2 Adjustments to Budget year (FY 1997) since Appropriated Amount (FY 1996) Appropriated Amount (FY 1995) FY 1996 President's Budget Adjustments to FY 1995 Adjustments to FY 1996



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Exhibit R-2 (PE 0605854A)

143

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Current President's Budget Submit

Project MIPP



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BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605854A Pollt	ve NUMBER AND TITLE 0605854A Pollution Prevention	Preventic	u (<u>a</u> 2	PROJECT M1PP
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M5PP Pollution Prevention - USASSDC	0	2855	1957	1371	685	584	532		Continuing	Continuing
A. Mission Description and Budget Item Justification: Project M5PP - U.S. Army Space and Strategic Defense Command (USASSDC): Resources in this project ensure an adequate level of funding for pollution prevention requirements at the USASSDC.	ition: Proj vention req	sct M5PP - l uirements at	U.S. Army S the USASSE	Space and So	trategic Def	ense Comm	and (USAS	SDC): Res	sources in this	project
FY 1995 Accomplishments: Program funded in Program Element 0605301A.	ogram Elem	ent 0605301	Ι Ά .							
 FY 1996 Planned Program: 2772 Fund pollution prevention programs such as hazardous material satellite areas, Halon reduction, removal and disposal of PCBs, etc. 63 SBIR/STTR 20 Revised Economic Assumption not available for execution. Total 2855 	grams such n not availa	as hazardou [.] ble for execu	s material sat ution.	tellite areas,	Halon reduc	tion, remove	ıl and dispos	al of PCBs	, etc.	

FY 1997 Planned Program:

• 1957 Fund pollution prevention programs such as hazardous material satellite areas, recycling of metals, Halon reduction, pollution prevention, etc.

Total 1957 • Total

FY 1997 1443	+514	1957
FY 1996 2935	2884	2855
F <u>Y 1995</u> 0		0
B. Project Change Summary Previous President's Budget (FY 1996)	Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to FY 1996	Adjustments to Budget year (4 7 1277) smoother 1996 President's Budget Current President's Budget Submit

Project M1PP

Page 4 of 7 Pages

Exhibit R-2 (PE 0605854A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		S L	SZO		RAPI			DATE	March 1996	ဖ
BUDGET ACTIVITY 6 - Management Support			PE NU 060	PE NUMBER AND TITLE 0605854A POIN	Ition	Prevention	N.	Door Cofficient Company of the Compa	a s	PROJECT MSPP
COST (In Thousands)	FY 1995 Actual	FY 1996 · Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M7PP Pollution Prevention - ODC Elimination	O	1976	799	0	0	6701	0		Continuing	Continuing
A. Mission Description and Budget Item Justification: Project M7PP - Pollution Prevention - ODC Elimination: Develop and implement the Army program to eliminate the use of ozone depleting chemicals (ODCs) on/for weapon systems. The program has been developed due to International Agreements (Montreal Protocol) Title VI of the Clean Air Act of 1990 and section 326 of P.L. 102-484.	tation: Proje DCs) on/for w P.L. 102-484	ct M7PP - Pe eapon systen	ollution Prev ns. The prog	vention - OL gram has be	OC Eliminati en develope	on: Develop d due to Inter	and implem national Ag	ent the Arm reements (N	y program to fontreal Prot	ocol) Title
FY 1995 Accomplishments: Program funded in Program Element	rogram Elem	ent 0605801A.	Ą.							
1										
	osure Depleting so	vents for av	iation and in	dustrial con	posite opera	ttions		-	-	
 600 Continue Test & Evaluation of hydrochlororluorocarbon (HCFC)-22 replacement in air conditioners/environmental control units in communication shelters. 	ot hydrochioi	oiluorocarb	om (FICFC)-2	22 repiacem	ient in air coi	nditioners/en	vironimentai	control unit	s in commu	Ication
• 136 Continue test and evaluation of Halon replacement for aviation engine nacelles	of Halon rep	acement for	aviation eng	gine nacelles	S					
14	ion not availa	ble for execution	ıtion							
Total 1976										
97 Plann	of HCFC-22	(Class II Ozo	one-Depleter	r) in air conc	ditioners/env	ss II Ozone-Depleter) in air conditioners/environmental control units in communication shelters.	ontrol units	in communi	ication shelte	Š.
Total /99										
B. Project Change Summary		EY 1995		FY 1996 2031	FY 1997					
Appropriated Amount (FY 1995)			,							
Adjustments to FY 1995 Appropriated Amount (FY 1996)				1996						
Adjustments to FY 1996				-20						
Adjustments to Budget year (FY 1997) since					+479					
Current President's Budget Submit			0	. 9261	199					
Project MSPP			Page 5 of 7 Pages	c7 Pages			Exhib	Exhibit R-2 (PE 0605854A)	0605854A)	
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BUDGET ACTIVITY 6 - Management Support			PE N(PE NUMBER AND TITLE 0605854A Pollu	E NUMBER AND TITLE 1605854A Pollution Prevention	Preventi	uo		4	PROJECT M7PP
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M8PP Pollution Prevention - Acquisttion Pollution Prevention	0	4163	10449	2892	2015	861	854		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project M8PP - Pollution Prevention - Acquisition Pollution Prevention: Develop and implement the Army program to reduce requirements for the acquisition and procurement of toxic chemicals. The program has been developed to comply with the requirements of Executive Order 12856, Section 3-303.

FY 1995 Accomplishments: Project funded under Program Element 0605801A.

FY 1996 Planned Program:

•	1379	1379 Continue to review documentation to identify toxic chemicals
•	2107	Continue to manage and initiate projects to identify, test and evaluate new substitute-alternatives
•	369	Continue changes to documentation to replace toxic chemicals with validated alternatives
•	187	Support PEO/PM implementation of validated technologies in contracts and technical requirements.
•	92	SBIR/STTR
•	29	Revised Economic Assumption not available for execution
Total	4163	

FY 1997 Planned Program:

Continue to review documentation to identify toxic chemicals	Continue to manage and initiate projects to identify, test and evaluate new substitute-alternatives	Continue changes to documentation to replace toxic chemicals with validated alternatives	Support PEO/PM implementation of validated technologies in contracts and technical requirements.	
3883	5016	950	009	10449
•	•	•	•	Total

Project M7PP

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Exhibit R-2 (PE 0605854A)

RDT&E BUDGET ITEM JUST	TEICATIO	Z H H H S S S	FICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605854A POILU	DTITLE Pollution Prevention	PROJECT
B. <u>Project Change Summary</u> Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	FX 1995 0	FX 1996 4279	E <u>V 1997</u> 3682	
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since		4204	+6767	
FY 1996 President's Budget Current President's Budget Submit	0	4163	10449	
Project M7PP	P_{ℓ}	Page 7 of 7 Pages	Exh	Exhibit R-2 (PE 0605854A)
		1254		





RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA.	TION SE	STIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE M	March 1996	9
вир сет АСТІ ИІТУ 6 - Management Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605856A Environmental Compliar Development, Testing & Evaluation	ווזנב invironm it, Testin	ental Col g & Eval	mpliance uation	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	rch,	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	49973	64349	53911	49900	45047	44449	42299		Continuing	Continuing
M0VV Environmental Compliance - AMC Test Ranges	33402	38657	34856	34215	31742	30995	30445		Continuing	Continuing
M1VV Environmental Compliance - AMC Major Subordinate Command/Laboratories	14638	20900	13972	12709	10698	11056	10009		Continuing	Continuing
M4VV Environmental Compliance - Corps of Engineers	1933	0	0	0	0	0	0		0	0
M5VV Environmental Compliance - USASSDC	0	4792	5083	2976	2607	2398	1845		Continuing	Continuing

permits and licensing fees; environmental training, plans and studies; and environmental monitoring and audits. Funds cost of complying with Federal Facility Compliance deficiencies cited in an inspection or notice of violation by a regulatory agency, or host nation equivalent; correct deficiencies where a statutory or regulatory deadline has Mission Description and Budget Item Justification: This program ensures that resources are available to fund legally mandated environmental compliance activities at passed; Class II - projects required to comply with an established standard, and deadline for compliance is in the future; Class III - salaries and training for environmental including waste treatment and disposal; radon abatement; repair and clean up of underground storage tank hazards; management of hazardous waste storage and disposal; control of current defense operations and disposal of hazardous waste incident to defense operations funded by the RDTE appropriation. Army defines environmental compliance or Defense Environmental Restoration Account (DERA) funded environmental restoration. In summary, this program provides for environmental quality effort as: Class I - support compliance with legally binding agreements or judgments under applicable Federal, State, local or host nation environmental law; correct compliance efforts at RDTE facilities). It finances environmental staff salaries; minor construction, repair and upgrade of facilities to meet environmental standards, Agreements (FFCA) and other environmental agreements, and correcting notices of violation. It does not finance construction or repairs unrelated to environmental personnel and projects required to maintain/improve environmental quality, but where non-compliance is not imminent. Includes effort directed toward support of U.S. Army RDTE installations, laboratories and test ranges. (No Operation and Maintenance, Army (OMA) appropriation funds are budgeted for environmental installations or operations required for general research and development use and therefore is appropriate for Budget Activity 6.

Page 1 of 8 Pages

Exhibit R-2 (PE 0605856A)

O.	RDT&E BUDGET ITEM JUST			SZO		FICATION SHEET (R-2 Exhibit)	oit)		DATE	March 1996	96
вирсет АстіVITY 6 - Management Support	t Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605856A Envi Development, T	ле nuмвек And тите 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	ental Col g & Eval	mpliance uation	- Resea		PROJECT MOVV
00	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0VV Environmental Co	Environmental Compliance - AMC Test Ranges	33402	38657	34856	34215	31742	30995	30445		Continuing	Continuing
A. <u>Mission Descripti</u> level of funding for le, Proving Ground (DPC	A. Mission Description and Budget Item Justification: Project M0VV - Environmental Compliance- AMC Test Ranges: Resources in the project ensure and adequate level of funding for legally mandated environmental compliance requirements at Yuma Proving Ground (YPG), AZ; Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and White Sands Missile Range (WSMR), NM. These operations are critical to the infrastructure of the Army testing.	ation: Projec compliance le Range (W	t MOVV - Er requirement SMR), NM.	nvironmenta s at Yuma P These oper	Il Compliand roving Grou ations are co	ce- AMC Test and (YPG), A ritical to the i	st Ranges: F \Z; Aberdee	Resources in en Proving C e of the Arm	the project Ground (APC 17 testing.	ensure and a	ıdequate gway
FY 1995 Accomplishments: 33402 Fund C and erc invente	ments: Fund Class I, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, sediment and erosion control, asbestos disposal, wastewater compliance, ozone-depleting substance minimization program, toxic release inventory, air emission inventories/permits, ground water monitoring, underground inspection control and responses to Notice of Deficiencies (NOD) for hazardous waste	ier "Must Fur disposal, was ater monitor	nd" environr tewater com ing, undergr	nental comp pliance, ozo ound inspect	liance prograne-depleting	ams such as substance nand response	undergroun ninimization s to Notice	d storage tan 1 program, to of Deficienc	nk removal/1 oxic release ies (NOD) f	remediation, inventory, a for hazardou	sediment ir emission s waste
Total 33402	management permus. Fund remaining compnance requirements such as mazardous waste ivianagement rrogram and program management.	smanning con	ipitalice icq	ni cilicilis su	IVII as Hazai	dous waste	Managenien	it r i Ugiaiii ai	nu program	managemen	
FY 1996 Planned Program: • 37687 Fund C Environ (NOD)	ogram: Fund Class I, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, Environmental Impact Statements, asbestos disposal, wastewater compliance, emissions inventory and permits, responses to Notice of Deficiencies (NOD) for hazardous waste management permits. Also funds hazardous waste disposal and program management.	ner "Must Fu lents, asbesto	nd" environt s disposal, w	nental comp /astewater co	liance progr ompliance, e	rams such as missions investigated	undergroun entory and I	d storage tar permits, resp ianagement.	ık removal/ı oonses to Nc	remediation, otice of Defi	ciencies
• 694 • 276 Total 38657	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Revised Economic Assumption not available for execution	search (SBII on not availal	\\$\Small Busines \text{sle for execution}	siness Techn ition	iology Trans	sfer (STTR)))			
FY 1997 Planned Program: • 34856 Fund C Enviror	ogram: Fund Class I, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, Environmental Impact Statement, asbestos disposal, wastewater compliance, expansion of solid waste landfill, backflow prevention program and	ner "Must Fu nent, asbestos	nd" environi disposal, w	nental comp astewater co	oliance programpliance, e	rams such as	undergroun solid waste l	d storage tar andfill, back	nk removal/i :flow prever	remediation, ıtion prograı	n and
Total 34856	closure of solid waste management units. A	ement units.	Also funds l	nazardous w	aste disposa	lso funds hazardous waste disposal and program management.	n managem	ent.			
Project M0VV				Page 2 of 8 Pages	8 Pages	e terminina principalismo, processor i pre		Exhib	it R-2 (PE	Exhibit R-2 (PE 0605856A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION S	SHEET (R	(-2 Exhibit)	DATE March 1996	96
вирдет АстіvітY 6 - Management Support	PE 06	PE NUMBER AND TITLE 0605856A Envil Development, T	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation		PROJECT MOVV
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	EY 1995 3403 3483 -81 33402	39693 -694 38999 -342 38657	FY 1997 32160 +2696 34856		
Project M0VV	Page 3	Page 3 of 8 Pages	Exhib	Exhibit R-2 (PE 0605856A)	

	RDT&E BUDGET ITEM JUST			Q S O		FICATION SHEET (R-2 Exhibit)	Dit)		DATE	March 1996	9
BUDGET ACTIVITY 6 - Management Support	nt Support			PENU 060 Dev	PE NUMBER AND TITLE 0605856A Envi Development, T	IITLE Invironm It, Testin	e number and title 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	mpliance lation	- Resea		PROJECT M1VV
Ö	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1VV Environmental C	Environmental Compliance - AMC Major Subordinate Command/Laboratories	14638	20900	13972	12709	10698	11056	10009		Continuing	Continuing
A. Mission Descrip level of funding for I Engineering Center (Natick, MA; and Arr	A. Mission Description and Budget Item Justification: Project M1VV - Environmental Compliance - AMC MSC/LAB: Resources in this project ensure an adequate level of funding for legally mandated environmental compliance requirements at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (NRDEC), Engineering Center (ARDEC), Pricatinny Arsenal, Dover, NJ; Soldier Systems Command, formerly, Natick Research, Development and Engineering Center (NRDEC), Natick, MA; and Army Research Laboratory Materials Technology Directorate (ARLMTD), Watertown (scheduled to close 30 September 1995).	ation: Projec I compliance Jover, NJ; So ials Technolo	t M1VV - E requiremen Idier Systen gy Director	Invironments tts at Army R ns Command ate (ARLMI	al Complian kesearch Lab I, formerly, I (D), Waterto	ce - AMC M oratory (AR Natick Resea wn (schedul	SC/LAB: R L), Adelphi, rch, Develoy	esources in t MD; Arman ement and E	this project e nent Resear ngineering (r 1995).	41VV - Environmental Compliance - AMC MSC/LAB: Resources in this project ensure an adequat quirements at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development ier Systems Command, formerly, Natick Research, Development and Engineering Center (NRDEC), Directorate (ARLMTD), Watertown (scheduled to close 30 September 1995).	quate nent and EC),
FY 1995 Accomplishments: • 14638 Fund C Waste reduced	fund Class I, Class II, and other environmental compliance programs such as installation of the Cooling Towers and Backflow Preventors, and the Waste Water System Toxic Pollutant Survey at NRDEC; hazardous waste closures, rehabilitation of sanitary west, first phase of installation of reduced emissions burners at powerhouse ARDEC; and at toxic reduction inventory ARL. Fund remaining compliance requirements such as Hazardous Waste disposal and program management.	ner environm ollutant Surv powerhouse d program m	ental compley at NRDE	iance progra C; hazardou id at toxic re	ms such as i s waste clos duction inve	nstallation oures, rehabilintory ARL.	f the Cooling itation of sar Fund remain	; Towers and itary west, f iing complia	d Backflow] Irst phase of ince requirer	tal compliance programs such as installation of the Cooling Towers and Backflow Preventors, and at NRDEC; hazardous waste closures, rehabilitation of sanitary west, first phase of installation of RDEC; and at toxic reduction inventory ARL. Fund remaining compliance requirements such as agement.	nd the of s
Total 14638)								e e e e e e e e e e e e e e e e e e e
FY 1996 Planned Program: • 20283 Fund C Hazard installa	Fund Class I, Class II, and other environmental programs such as the Conversion of the Central Boiler House to Natural Gas and the Upgrade of the Hazardous Waste Storage Building at NRDEC; hazardous waste closures, rehabilitation of sanitary sewer west, upgrade lift stations and complete installation of reduced emission burner at powerhouse at ARDEC; and environmental program management and administration and Phase III of	her environm ilding at NRJ on burner at	ental progra DEC; hazar powerhouse	ams such as t dous waste c at ARDEC;	the Conversi slosures, rehi and environ	on of the Ce abilitation of umental prog	ntral Boiler] [sanitary sev ram manage ch as Hazard	House to Na ver west, upg ment and ad	tural Gas angrade lift sta ministration	al programs such as the Conversion of the Central Boiler House to Natural Gas and the Upgrade of the S; hazardous waste closures, rehabilitation of sanitary sewer west, upgrade lift stations and complete verhouse at ARDEC; and environmental program management and administration and Phase III of Finnd remaining compliance requirements such as Hazardous Waste disposal and program management.	
• 466 • 151 Total 20900		pgrace at Art on not availa	. 4	ution					4		
FY 1997 Planned Program: • 13972 Fund C require of unde	rogram: Fund Class I, Class II, and other environmental programs, such as, drinking water cross-connection program and compliance with sewage prevention requirement at ARDEC; upgrade of fume hood exhaust controls and final phase of underground storage tank upgrade program at ARL. Fund remaining compliance requirements such as Hazardous Waste Disposal and program management.	her environm rade of fume upgrade prog	ental progri hood exhau ram at ARL	ams, such as ist controls a	, drinking w nd final phas aining comp	ater cross-co se of undergi liance requir	nnection pro round storag ements such	gram and co e tank upgra as Hazardor	ompliance w de program us Waste Di	ith sewage p at NRDEC; f sposal and pi	revention final phase ogram
Total 13972											346
Project M1VV			en de de la constitución de la c	Page 4 o	Page 4 of 8 Pages			Exhit	oit R-2 (PE	Exhibit R-2 (PE 0605856A)	And the section of the second comment
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET	(R-2 Exhibit)	DATE March 1996
вироет астіvіту 6 - Management Support	PE NUMBER AND TITLE 0605856A Envil Development, T	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	PROJECT 9 - Research, M1VV
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget	딥	FY 1997 10878 +3094	,
Current President's Budget Submit	14638 20900	13972	
Project M1VV	Page 5 of 8 Pages	Exhibi	Exhibit R-2 (PE 0605856A)
	1259		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		2011			2 Exhi		And the second s	DATE	March 1996	မွ
BUDGET ACTIVITY 6 - Management Support	grozen eki balega yayan dendan uroke		PE NU 060 Dev	PE NUMBER AND TITLE 0605856A Envi Development, T	ле nuмвек And тит.е 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	ental Cor g & Evalı	mpliance lation	- Resea		PROJECT M4VV
COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M4VV Environmental Compliance - Corps of Engineers	1933	0	0	0	0	0	0		0	0
A. Mission Description and Budget Item Justification: Project M4VV - Environmental Compliance - Corps of Engineers: Resources in this project are for an industry cost-share demonstration of a 3000 HP low emission natural gas boiler. The funds went to Construction Engineering Research Laboratory (CERL) for demonstration at Watervliet Army Arsenal, New York.	cation: Projec on natural gas	t M4VV - E boiler. The	invironment funds went	al Complian to Construci	ce - Corps of ion Engineer	Engineers: ring Researc	Resources i h Laborator	n this projec y (CERL) fo	t are for an i r demonstra	ndustry ion at
FY 1995 Accomplishments:	cost-shared d	emonstration	1 of a 3000 F	HP low emis	sion natural į	gas boiler.				
FY 1996 Planned Program: Program not funded.										
FY 1997 Planned Program: Program not funded.										
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)		FY 1995 1974 1933		FY 1996 0	FY 1997 0					
Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996				1965 -1965						
Adjustments to Budget year (* 1 1777) smee FY 1996 President's Budget Current President's Budget Submit		16	1933	0	0					
Change Summary Explanation: Funding: FY 96: These funds have been decremented to	decremented		reflect proposed reprogramming.	ogramming.						
Decise MAVV			Page 6 o	Page 6 of 8 Pages			Exhi	Exhibit R-2 (PE 0605856A)	0605856A)	
Project M4 V		Service of the service of the service of the service of	topestics and a second	dentification and desirement	arias arias arias de la maio de la companya del companya de la companya de la companya del companya de la compa					

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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	IS NOI	TIFICATION SHEET (R-2 Exhibit)	2 Exhit	Sit.)		DATE M	March 1996	6
вирсет Астіміту 6 - Management Support	ent Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605856A Environmental Compliar Development, Testing & Evaluation	ITLE nvironm It, Testin	ental Cor g & Evalt	npliance Jation	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation		PROJECT M5VV
	COST (in Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M5VV Environment	M5VV Environmental Compliance - USASSDC	0	4792	5083	2976	2607	2398	1845		Continuing	Continuing
A. <u>Mission Desci</u> (USASSDC): Re	A. Mission Description and Budget Item Justification: Project MSVV - Environmental Compliance - U.S. Army Space and Strategic Defense Comi (USASSDC): Resources in this project ensure an adequate level of funding for legally mandated environmental compliance requirements at the USASSDC.	ation: Proje dequate level	ct MSVV -	Environme for legally m	ntal Complinandated env	ance - U.S. ironmental c	Army Space ompliance r	e and Strate equirements	ect MSVV - Environmental Compliance - U.S. Army Space and Strategic Defense Command of funding for legally mandated environmental compliance requirements at the USASSDC.	Command SSDC.	
FY 1995 Accomp	FY 1995 Accomplishments: Funded under Program Element 0	m Element 0	605301A, Pi	1605301A, Project MAC2.	oi.						
FY 1996 Planned Program: • 4653 Fund en	d Program: 53 Fund environmental compliance programs such as testing for hazardous materials, shipment of hazardous wastes, environmental staff training, quarterly testing of potable water, clean up fuel/oil contamination, environmental standards documentation, environmental awareness training, quarterly testing of potable water, clean up fuel/oil contamination, environmental awareness training,	nce programs ater, clean up	such as test fuel/oil con	ing for hazaı ıtamination, I and disnos	rdous materi environmen	als, shipmen tal standards s. water qua	t of hazardo documentat lity, etc.	us wastes, e	nvironmenta mental awar	l staff trainin eness trainin	දුල දුල
• 106 • 33 Total 4792		on not availa	ble for execu	rtion.							
FY 1997 Planned Program: • 5083 Fund er enviror	ned Program: 5083 Fund environmental compliance programs such as PCB removal, testing for hazardous materials, shipment and disposal of hazardous wastes, environmental staff training, water quality, clean up fuel/oil contamination, underground storage tank compliance, asbestos removal and shipment,	nce programs water quality	s such as PC	B removal, t iel/oil contar	esting for ha nination, un	zardous mat derground st	erials, shipm orage tank c	nent and disponding	oosal of haza asbestos rem	rdous wastes oval and shij	, ıment,
Total 5083	mitigation monitoring, etc.										
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Project M5VV

Exhibit R-2 (PE 0605856A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FCATO		R-2 Exhibit)	DATE March 1996	1996
вирсет Астіvіту 6 - Management Support		PE NUMBER AND TITLE 0605856A Envi Development, T	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	iance - Research, on	PROJECT MSVV
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996)	FY 1995 0	FY 1996 4927 -86 4841 -49	5838 5838 -755		
Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	0	4792	5083		
Project M5VV	Pa_i	Page 8 of 8 Pages		Exhibit R-2 (PE 0605856A)	(6A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION S	HEET (R	-2 Exhil	bit)		DATE M	March 1996	(0)
BUDGET ACTIVITY 6 - Management Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605876A Mino Development, T	ппе Ninor Cor nt, Testin	PENUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	n - Resea Jation	ırch,		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	5569	5347	4319	4333	4457	4440	4506		Continuing	Continuing
MOWW Minor Construction - Test Ranges	2841	3450	2766	2731	2781	2869	2941		Continuing	Continuing
M1VVV Minor Construction - AMC Subordinate Commands and Laboratories	2301	1271	1062	1118	1197	1098	1096		Continuing	Continuing
M4WW Minor Construction - Corps of Engineers	427	626	491	484	479	473	469		Continuing	Continuing

extension, alteration, conversion, relocation or replacement of an existing real property facility. Includes design costs directly associated with accomplishing a designated project undertaking. These projects substantially prolong the useful life of the facility and are all actually facility investments. Includes effort directed toward support of Mission Description and Budget Item Justification: This program element finances activities and functions necessary to provide facility related minor construction for U.S. Army RDTE installations, laboratories and test ranges. Minor construction includes: erection, installation, or assembly of a new real property facility; expansion, installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

Page 1 of 7 Pages

Exhibit R-2 (PE 0605876A)

&	RDT&E BUDGET II			FICATION SHEET		(R-2 Exhibit)	Pit)	STATE OF THE STATE	DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support	t Support		-	PE NU 060 Dev	PE NUMBER AND TITLE 0605876A Mino Development, T	TITLE Minor Cor Nt, Testin	e number and Title 0605876A Minor Construction - Research, Development, Testing & Evaluation	n - Rese uation	rch,	Δ. ==	PROJECT MOWW
00	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MOWW Minor Construction - Test Ranges	on - Test Ranges	2841	3450	2766	2731	2781	2869	2941		Continuing	Continuing
A. Mission Descripti assigned to Test and F Missile Range, NM. I managed include over	A. Mission Description and Budget Item Justification: Finances RDTE minor construction projects for U.S. Army Materiel Command (AMC) technical test ranges assigned to Test and Evaluation Command (TECOM), i.e., Yuma Proving Ground, AZ; Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; and White Sands Missile Range, NM. In addition, project provides common service host support for over 100 tenants and satellites located on these four TECOM ranges. Facility assets managed include over approximately 4 million acres of land, over 24.4 million square feet of building space, 3 thousand miles of roads, and 2 thousand miles of utility lines.	ation: Finan 1), i.e., Yum mmon servi s of land, ove	ces RDTE n a Proving G ce host supr r 24.4 milli	ninor construround, AZ;	iction projec Aberdeen Pl 100 tenants et of buildin	ts for U.S. A coving Groun and satellite g space, 3 th	nrmy Materie nd, MD; Dug s located on cousand mile	el Command gway Provin these four T s of roads, a	g Ground, t ECOM rang nd 2 thousar	hnical test rai JT; and Whit ges. Facility nd miles of u	nges e Sands assets tility lines.
FY 1995 Accomplishments: • 1273 Funded	ments: Funded minor construction projects at Aberdeen Proving Ground, MD	ojects at Abe	rdeen Provi	ng Ground,	MD						
408783	Funded minor construction projects at Dugway Proving Ground, UT Funded minor construction projects at White Sands Missile Range, NM	ojects at Du _l	gway Provir ite Sands M	ig Ground, U issile Range,	NN NN						
• 377 Total 2841	Funded minor construction projects at Yuma Proving Ground, AZ.	ojects at Yu	na Proving	Ground, AZ.							
FY 1996 Planned Program:	ogram:										
1477	Fund minor construction projects at Aberdeen Proving Ground, MD	ects at Aberc	leen Proving	Ground, M.	D						
457	Fund minor construction projects at Dugway Proving Ground, Ul Fund minor construction projects at White Sands Missile Range, NM	ects at Dugw ects at White	ay Proving Sands Miss	Ground, UI iile Range, N	M						
685	Fund minor construction projects at Yuma Proving Ground, AZ	ects at Yums	1 Proving G1	ound, AZ	,						
77	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)	esearch (SBI	R)/Small Busines ble for execution	isiness Techi	nology Tran	sfer (STTR)					
Total 3450	Nevisca Economic Assumption										
FV 1997 Planned Program:	ogram:										
• 1478	Fund minor construction projects at Aberdeen Proving Ground, MD	ects at Aber	leen Provin	g Ground, M	8						
295	Fund minor construction projects at Dugway Proving Ground, UT	ects at Dugy	ay Proving	y Proving Ground, UT Sands Missile Range, NM	. Mr						
323	Fund minor construction projects at Yuma	ects at Yum	a Proving Ground, AZ	round, AZ	•						
Total 2766	•										
Project M0WW				Page 2 of 7 Pages	f 7 Pages			Exhil	oit R-2 (PE	Exhibit R-2 (PE 0605876A)	And the second s
Service and the service of the servi		the wife of the control of the contr	The state of the s		A CONTRACTOR OF THE PROPERTY O						





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IFICATION	N SHEET (R-2 Exhibit)	DATE	March 1996
вир сет Асті міту 6 - Management Support		PE NUMBER AND TITLE 0605876A Mino Development, T	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	arch,	PROJECT MOWW
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	EX 1995 2902 2841	EX 1996 3548 3486	EY 1997 2841		
Appropriated Amount (17, 1995) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget		-36	-75		
Current President's Budget Submit	2841	3450	2766		
Project M0WW	Pa	Page 3 of 7 Pages	Exhi	oit R-2 (Pl	Exhibit R-2 (PE 0605876A)

RDT&E BUDGET ITEM JUST			SZOL	IFICATION SHEET (R-2 Exhibit)	2-2 Exhi	3.0	and a	DATE	March 1996	(0
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TITLE			ANGORAN PARAMETER ANGOLOGICA ANGOLOGICA	hd	PROJECT
6 - Management Support			000	5876A R	Minor Co.	nstructio	0605876A Minor Construction - Research,	rch,		
			De	Development, Testing & Evaluation	nt, Testin	g & Eval	uation			ees sou võusekas
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1WW Minor Construction - AMC Subordinate Commands and Laboratories	2301	1271	1062	1118	1197	1098	1096		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: This project finances minor construction projects for U.S. Army Materiel Command major subordinate command Picatinny Arsenal, Dover, NJ, and Soldier Systems Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), Natick, MA. Also provides common service host support to 36 tenants located at these installations. Facilities managed include 8,996 acres of land and 6.4 million square feet of building RDTE installations and laboratories, i.e., Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC),

FY 1995 Accomplishments:

- Funded minor construction projects at ARDEC, Picatinny Arsenal, NJ
 - Funded minor construction projects at ARL, Adelphi, MD 320
- Funded minor construction projects at SSCOM, Natick, MA. 175
 - 2301

FY 1996 Planned Program:

- Fund minor construction projects at ARDEC, Picatinny Arsenal, NJ
 - Fund minor construction projects at ARL, Adelphi, MD 187
- Fund minor construction projects at SSCOM, Natick, MA.
- Revised Economic Assumption not available for execution
- Total

FY 1997 Planned Program:

- Fund minor construction projects at ARDEC, Picatinny Arsenal, NJ 832
 - Fund minor construction projects at ARL, Adelphi, MD 150
- Fund minor construction projects at SSCOM, Natick, MA.

Project M1WW

1266

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Exhibit R-2 (PE 0605876A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATIO	N SHEET (R-2 Exhibit)	DATE	March 1996
вирбет АСТІVІТУ 6 - Management Support		PE NUMBER AND TITLE 0605876A Mino Development, T	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	- Research, ition	PROJECT M1WW
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	FX 1995 2261 2261 +40	EY 1996 1305 1283 -12	FY 1997 1062		
Current President's Budget Submit	2301	1271	1062		
Project M1WW	Pa	Page 5 of 7 Pages		Exhibit R-2 (PE 0605876A)	- 0605876A)
		1361			

RDT&E BUDGET ITEM JUSTI		5			FICATION SHEET (R-2 Exhibit)	£ Q		DATE	March 1996	ග
BUDGET ACTIVITY 6 - Management Support			PE NU 060 Dev	PENUMBERAND TITLE 0605876A Mino Development, T	PENUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	struction g & Evalu	n - Resea uation	ırch,		PROJECT MAWW
COST (In Thousands) FY 1995 FY Actual Es	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M4WW Minor Construction - Corps of Engineers	427	626	491	484	479	473	469		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Project finances those minor construction projects for U.S. Army Corps of Engineers RDTE laboratories located at Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research and Engineering Laboratory (CRREL), Hanover, NH; Topographic Engineering Center (TEC), Alexandria, VA and Construction Engineering Research Laboratory (CERL), Champaign, IL.

FY 1995 Accomplishments:

Funded minor construction projects at CERL, Champaign, IL. Funded minor construction projects at CRREL, Hanover, NH Funded minor construction projects at WES, Vicksburg, MS. 121 125 181 427 Total

FY 1996 Planned Program:

- Fund minor construction projects at CRREL, Hanover, NH Fund minor construction projects at WES, Vicksburg, MS SBIR/STTR 320 287
 - 14
- Revised Economic Assumption not available for execution

Total

FY 1997 Planned Program:

- Fund minor construction projects at TEC, Alexandria, VA 86
- Fund minor construction projects at CRREL, Hanover, NH 231
 - Fund minor construction projects at WES, Vicksburg, MS 162
 - Total

Page 6 of 7 Pages

Project M4WW

Exhibit R-2 (PE 0605876A)







RDT&E BUDGET ITEM JUS	TIFICATION SHEET (R-2 Exhibit)	SHEET (F	R-2 Exhibit)	DATE March 1996	9661
вирсет АстіVітУ 6 - Management Support		PE NUMBER AND TITLE 0605876A Mino Development, T	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	arch,	PROJECT M4WW
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget	FY 1995 546 534 -107	FY 1996 644 632 -6	FY 1997 504 -13		
Project M4WW	Page	Page 7 of 7 Pages	Exhil	Exhibit R-2 (PE 0605876A)	jA)

RDT&E BUDGET ITEM JUST		THEGA		FICATION SHEET (R-2	FICATION SHEET (R-2 Exhibit)			DATE MA	March 1996	6
BUDGET ACTIVITY 6 - Management Support			PE NU Dev	PE NUMBER AND TITLE 0605878A Main Development, T	ve number AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	ice and F g & Evali	lepair - F	lesearch,	6	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	79302	93089	66047	67907	68324	63560	61099		Continuing	Continuing
MOYY Maintenance and Repair - AMC Test Ranges	60141	70690	50862	52400	50793	48903	47145		Continuing	Continuing
M1YY Maintenance and Repair - AMC Subordinate Commands/Laboratories	16071	17644	11807	11964	13548	11575	10877		Continuing	Continuing
M4YY Maintenance and Repair - U.S. Army Corps of Engineers	3090	4755	3378	3543	3983	3082	3077		Continuing	Continuing

Mission Description and Budget Item Justification: This program element finances activities and functions necessary for maintenance and repair of real property at U.S. Army RDTE installations, laboratories and test ranges. Maintenance and repair of real property includes applicable expenses of cyclic and preventive maintenance and prolong the useful life of the facility, and are all actually facility investments. Includes effort directed toward support of installations or operations required for general annual recurring repair incurred by building trade shops, construction units, grounds and pavements units, machine shops and contracts. These projects substantially research and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605878A)





RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE ME	March 1996	40
BUDGET ACTIVITY 6 - Management Support			PE NU 060 Dev	FENUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	пт <u>г</u> laintenan it, Testin	nce and F g & Evalu	Repair - Lation	ENUMBER AND TITLE 1605878A Maintenance and Repair - Research, 1 Development, Testing & Evaluation		PROJECT MOYY
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0YY Maintenance and Repair - AMC Test Ranges	60141	70690	50862	52400	50793	48903	47145		Continuing Continuing	Continuing

technical test ranges assigned to Test and Evaluation Command (TECOM), i.e., Yuma Proving Ground, Arizona; Aberdeen Proving Ground, Maryland; Dugway Proving Ground, Utah; and White Sands Missile Range, New Mexico. In addition, provides common service host support for over 100 tenants and satellites located on these four TECOM ranges. Facility assets managed include over 4 million acres of land, over 24.4 million square feet of building space, 3 thousand miles of roads, and 2 thousand A. Mission Description and Budget Item Justification: Finances functions for maintaining and repairing infrastructure for U.S. Army Materiel Command (AMC) miles of utility lines.

FY 1995 Accomplishments:

	•	
•	32214	32214 Funded minimum operational maintenance requirement and \$7 million in repair projects at Aberdeen Proving Ground, MD.
•	6475	Funded minimum operational maintenance requirement and \$3 million in repair projects at Dugway Proving Ground, UT.
•	14338	Funded minimum operational maintenance requirement and \$10 million in repair projects at White Sands Missile Range, NM.
•	7114	Funded minimum operational maintenance requirement and \$5 million in repair projects at Yuma Proving Ground, AZ.
Total	60141	

FY 1996 Planned Program:

T T T// T Imilian a new Table		
•	37003	Fund minimum operational maintenance requirement and \$13 million for repair projects at Aberdeen Proving Ground, MD.
•	6885	Fund minimum operational maintenance requirement and \$3 million for repair projects at Dugway Proving Ground, UT.
•	16133	Fund minimum operational maintenance requirement and \$6 million for repair projects at White Sands Missile Range, NM.
•	8731	Fund minimum operational maintenance requirement and \$3 million for repair projects at Yuma Proving Ground, AZ.
•	1434	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)
•	504	Revised Economic Assumption not available for execution
Total	70690	

Project M0YY

Page 2 of 7 Pages

Exhibit R-2 (PE 0605878A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION		R-2 Exhibit) DATE	March 1996
BUDGET ACTIVITY 6 - Management Support	<u>a</u>	PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	PROJECT NOYY
FY 1997 Planned Program:	ements and no sments and no	resources for re resources for re resources for re resources for re	Pund minimum operational maintenance requirements and no resources for repair projects at Aberdeen Proving Ground, MD. Fund minimum operational maintenance requirements and no resources for repair projects at Dugway Proving Ground, UT. Fund minimum operational maintenance requirements and no resources for repair projects at White Sands Missile Range, NM. Fund minimum operational maintenance requirements and no resources for repair projects at Yuma Proving Ground, AZ. Funds Federal Energy Management projects.	C X
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustments to FY 1996	FY 1995 61543 60359 -218	FY 1996 72670 71399 -709	FY 1997 49492	
Adjustments to Budget year (FY 1997) since FY 1996 President's Budget			+1370	
Current President's Budget Submit	60141	70690	50862	
	,			
Project M0YY	Page	Page 3 of 7 Pages	Exhibit R-2 (Exhibit R-2 (PE 0605878A)
		1272		





	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	FIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhil	oit)		DATE N	March 1996	ဟ
вирдет АСТІМІТУ 6 - Management Support	t Support			PE NL 060 Dev	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	ITLE Iaintenar It, Testin	ice and f	Repair - F uation	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation		PROJECT M1YY
ŏ	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1YY Maintenance and Repair Commands/Laboratories	Maintenance and Repair - AMC Subordinate Commands/Laboratories	16071	17644	11807	11964	13548	11575	10877		Continuing	Continuing
A. Mission Descripting infrastructu Maryland; Armamen Research, Developmer Facilities managed in	A. Mission Description and Budget Item Justification: This project finances those maintenance and repair activities and functions necessary for maintaining and repairing infrastructure for the U.S. Army Materiel Command major subordinate command RDTE installations and laboratories, i.e., Army Research Laboratory, Adelphi, Maryland; Armament Research, Development and Engineering Center, Picatinny Arsenal, Dover, New Jersey; and Soldier System Command (SSCOM), formerly, Natick Research, Development and Engineering (RDE) Center, Natick, Massachusetts. Also provides common service host support to 36 tenants located at these installations. Facilities managed include 8,996 acres of land and 6.4 million square feet of building space with necessary utilities and road systems.	ation: This p Command m ingineering C nter, Natick,	roject finandijor subordi Jor subordi Jenter, Picat Massachuse uare feet of	ces those ma nate comma inny Arsena itts. Also pre building spe	intenance ar nd RDTE in I, Dover, Ne ovides comm	id repair acti stallations ar w Jersey; an ion service h	vities and fu id laboratori d Soldier Sy ost support	inctions neces, i.e., Arm stem Comm to 36 tenants systems.	sssary for may Research I and (SSCO) and Socotes I becated at t	aintaining an Laboratory, / M), formerly, these installat	1 delphi, Natick ions.
FY 1995 Accomplishments:	hments: Funds maintenance and repair projects at Picatinny Arsenal, NJ. Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD. Funds maintenance and repair projects at Soldier Systems Command, Natick, MA	projects at F projects at / projects at S	icatinny Ar vrny Reseai oldier Syste	senal, NJ. rch Laborato ems Comma	ory, Adelphi, nd, Natick, I	MD.					
FY 1996 Planned Program:	rogram: Funds maintenance and repair projects at Picatinny Arsenal, NJ. Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD. Funds maintenance and repair projects at Soldier Systems Command, Natick, MA SBIR/STTR Revised Economic Assumption not available for execution	r projects at F r projects at 7 r projects at 3 n not availal	icatinny Arsenal, NJ. Army Research Labors oldier Systems Comn ole for execution	senal, NJ. rch Laboratc ems Comma ution	ory, Adelphi, nd, Natick, I	.MD.					
FY 1997 Planned Program:	rogram: Funds maintenance and repair projects at Picatinny Arsenal, NJ. Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD Funds maintenance and repair projects at Soldier Systems Command, Natick, MA	r projects at l r projects at r r projects at s	icatinny Ai Army Resea Soldier Syst	rsenal, NJ. irch Laborate ems Comma	ory, Adelphi nd, Natick,]	, MD МА					
Project M1YY				Page 4 of 7 Pages	77 Pages			Exhil	oit R-2 (PE	Exhibit R-2 (PE 0605878A)	

RDT&E BUDGET ITEM JUSTIFIC	IFICATION SHEET (R-2 Exhibit)	(R-2 Exhibit) DATE March 1996	986
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	PROJECT M1YY
B. Project Change Summary Previous President's Budget (FY 1996) Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget	16534 EX 1996 16534 18140 16186 -115 17822 -178	FY 1997 12659 -852	
bmit .	16071 17644	11807	
Project M1YY	Page 5 of 7 Pages	Exhibit R-2 (PE 0605878A)	8A)
	1274		

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Ľ	RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	TION SE	IEET (R	TIFICATION SHEET (R-2 Exhibit)	oit)		DATE N	March 1996	9
BUDGET ACTIVITY 6 - Management Support	t Support			PE NU 060 Dev	PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	ice and I g & Eval	Repair - Fuation	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation		PROJECT M4YY
ŏ	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M4YY Maintenance an Engineers	Maintenance and Repair - U.S. Army Corps of Engineers	3090	4755	3378	3543	3983	3082	3077		Continuing	Continuing
A. Mission Descript repairing infrastructu and Engineering Labo Alexandria, VA.	A. Mission Description and Budget Item Justification: This project finances those maintenance and repair activities and functions necessary for maintaining and repairing infrastructure for the U.S. Army Corps of Engineers RDTE laboratories located at Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Fand Engineering Laboratory (CRREL), Hanover, NH; Construction Engineering Research Laboratory (CERL), Champaign, IL and Topographic Engineering Center Alexandria, VA.	ation: This p Engineers RJ H; Constructi	roject financ YE laborate on Engineer	ses those ma ories located ing Researcl	intenance ar at Waterwa h Laborator	id repair acti ys Experime / (CERL), C	vities and funt Station (V	inctions neco WES), Vicks L and Topog	essary for masburg, MS; Cgraphic Engi	oroject finances those maintenance and repair activities and functions necessary for maintaining and DTE laboratories located at Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research ion Engineering Research Laboratory (CERL), Champaign, IL and Topographic Engineering Center (TEC),	d Research er (TEC),
FY 1995 Accomplishments:	fund maintenance and repair projects at CERL, Champaign, IL. Fund maintenance and repair projects at CRREL, Hanover, NH. Fund maintenance and repair projects at TEC, Alexandria, VA. Fund maintenance and repair projects at WES, Vicksburg, MS.	projects at C projects at C projects at T projects at W	ERL, Cham RREL, Hand EC, Alexand ES, Vicksb	oaign, IL. ver, NH. Iria, VA urg, MS.							
FY 1996 Planned Program:	rogram: Fund maintenance and repair projects at CERL, Champaign, IL. Fund maintenance and repair projects at CRREL, Hanover, NH. Fund maintenance and repair projects at TEC, Alexandria, VA. Fund maintenance and repair projects at WES, Vicksburg, MS. Revised Economic Assumption not available for execution	projects at C projects at C projects at T projects at V on not availa	ERL, Cham RREL, Han EC, Alexand ES, Vicksb	paign, IL. over, NH. Iria, VA urg, MS ttion							
FY 1997 Planned Program:	rogram: Fund maintenance and repair projects at CERL, Champaign, IL. Fund maintenance and repair projects at CRREL, Hanover, NH. Fund maintenance and repair projects at TEC, Alexandria, VA Fund maintenance and repair projects at WES, Vicksburg, MS	projects at C projects at C projects at T	ERL, Cham RREL, Han EC, Alexan ÆS, Vicksb	paign, IL. over, NH. dria, VA urg, MS							
Project M4YY				Page 6 of 7 Pages	7 Pages			Exhi	bit R-2 (PE	Exhibit R-2 (PE 0605878A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SATION		?-2 Exhibit)	DATE March 1996	o no s na latis no ag
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605878A Main Development, T	oe number and Title 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	Project Research, M4YY	L
Y 1996) 5) 6) Y 1997) since	FY 1995 2983 2983 +107	FY 1996 4886 4801 -46	F <u>Y 1997</u> 3379 -1		
FY 1990 President's Budget Submit	3090	4755	3378		
					ta an ag bhliain ag a sha an ag a tha an an ta 100 llean be innigh an treataile ag bhliain a'
	s		Ü		accompany of the second se
Project M4YY	Page	Page 7 of 7 Pages 1276		איט יטטטטט באן א-א ווטונ	Section of the sectio

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
вироет АстіVITY 6 - Management Support			PENI 060 Enç	PE NUMBER AND TITLE 0605879A Oper Engineering	тпсе Operation I	of Utiliti	PENUMBER AND TITLE 0605879A Operation of Utilities & Other Engineering	<u>.</u>		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	92390	87950	88976	88651	89179		Continuing	Continuing
M0UU Real Property Services - TECOM	0	0	62918	58244	57934	57542	57156		Continuing	Continuing
M1UU Real Property Services - AMC MSC/LAB	0	0	24858	24937	26098	25992	26727		Continuing	Continuing
M4UU Real Property Services - COE	0	0	4614	4769	4944	5117	5296		Continuing	Continuing

sewage systems. Element also finances the labor associated with real property support along with fire prevention, custodial service contracts, collection and disposal of refuse, pest control management, snow/ice and sand removal. It also supports the engineering, general management, supervision, mapping, planning, utilization inspection Mission Description and Budget Item Justification: This program is not a new start. Program represents a zero sum transfer from Program Element 0605896A Base necessary for operation of utilities (with the exception of communications). It includes purchase of electricity, operations of heating plants and water distribution and Operations - RDT&E of alpha account "J" Operation of Utilities and "M" Other Engineering to this new program element. Element finances activities and functions and other activities of a general nature performed by the Directorate for Public Works (DPW) both in-house and by contract.

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Exhibit R-2 (PE 0605879A)

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RDT&E BUDGET ITEM JUS		TECA	TON S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)	Q	DATE M	March 1996	မွှ
BUDGET ACTIVITY 6 - Management Support			PE NI 060	E NUMBER AND TITLE D605879A Oper	гіт <u>ге</u>)peration	of Utiliti	E NUMBER AND TITLE 0605879A Operation of Utilities & Other		P	PROJECT MOUU
	A CONTRACTOR OF THE PARTY OF TH	And the second s	Щ.	Engineering						
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0UU Real Property Services - TECOM	0	0	62918	58244	57934	57542	57156		Continuing	Continuing Continuing

Proving Ground, Arizona; Aberdeen Proving Ground, Maryland; Dugway Proving Ground, Utah; and White Sands Missile Range, New Mexico. Also supports civilian and service host support for over 100 tenants and satellites located on the four TECOM ranges. These tenants consume over 50% of the costs within this project. Facility assets A. Mission Description and Budget Item Justification: Project MOUU - Operation of Utilities & Other Engineering - AMC Test Ranges: Finances the operation of commercial activities contract labor force associated with other engineering programs to include firefighters, custodial and refuse removal. In addition, provides common utilities and other engineering services for U.S. Army Materiel Command (AMC) technical test ranges assigned to Test and Evaluation Command (TECOM), i.e., Yuma managed include over 4 million acres of lands, over 24.4 million square feet of building space, 3 thousand miles of roads and 2 thousand miles of utility lines.

FY 1995 Accomplishments: Program funded in Program Element 0605896A.

FY 1996 Planned Program: Program funded in Program Element 0605896A.

FY 1997 Planned Program:

•	39059	Fund operations of utilities and other engineering at Aberdeen Proving Ground, Maryland
•	6138	Fund operations of utilities and other engineering at Dugway Proving Ground, Utah
•	13150	Fund operations of utilities and other engineering at White Sands Missile Range, New Mexico
•	4571	Fund operations of utilities and other engineering at Yuma Proving Ground, Arizona
Total	62918	

	B. Project Change Summary	FY 1995	FY 1995	FY 1997
	Previous President's Budget (FY 1996)	0	0	0
	Appropriated Amount (FY 1995)			
	Adjustments to FY 1995			
-,00000000	Appropriated Amount (FY 1996)			
	A dimeter on to EV 1006			

1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Adjustments to FY 1996			
Adjustments to Budget year (FY 1997) since			Ŧ
FY 1996 President's Budget			
Current President's Budget Submit	0	0	•
Project Mol II I	Page	Page 2 of 4 Pages	

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Exhibit R-2 (PE 0605879A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhil	oit)		DATE N	March 1996	9
вирсет АСТІVІТУ 6 - Management Support			PE NU 060 Enç	PE NUMBER AND TITLE 0605879A Operation of Utilities & Other Engineering	пт г Е)peration	of Utiliti	es & Oth	er	a V	PROJECT M1UU
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1UU Real Property Services - AMC MSC/LAB	0	0	24858	24937	26098	25992	26727		Continuing	Continuing
A. Mission Description and Budget Item Justification: Project M1UU - Operation of Utilities and Other Engineering - AMC MSC/LAB: Finances the operation of utilities and other engineering services for U.S. Army Materiel Command (AMC) installations and laboratories, i.e., Armament Research, Development and Engineering Arsenal, NJ; Army Research Laboratory (ARL), Adelphi, MD; and Soldier Systems Command (SSCOM), formerly Natick Research, Development and Engineering Center (NRDEC), Natick, MA.	ation: Proj ny Materiel C search Labor atick, MA.	ect M1UU - Command (A atory (ARL)	Operation (MC) installa , Adelphi, M	of Utilities a ations and lal ID; and Sold	nd Other En boratories, i.e	ngineering - e., Armamer	AMC MSC nt Research, SSCOM), foi	C/LAB: Fin Developme merly Natio	ances the ope nt and Engin ck Research,	ration of eering
FY 1995 Accomplishments: Program funded in Program Element 0605896A.	rogram Elem	ent 0605896	A.							
FY 1996 Planned Program: Program funded in Program Element 0605896A.	ogram Elem	ent 0605896	A.							
FY 1997 Planned Program: 16353 Armament Research, Development and En 5733 Army Research Laboratory, Adelphi, MD 2772 Soldier Systems Command, Natick, MA Total 24858	pment and Es Adelphi, MD Vatick, MA		enter, Picatii	gineering Center, Picatinny Arsenal, NJ	Ŕ					
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)		FY 1995 0		FY 1996 0	FY 1997 0					
Adjustments to FY 1990 Adjustments to Budget year (FY 1997) since					+24858					
Fr 1990 rresident's Budget Submit			0	0	24858					
Project M1UU			Page 3 of 4 Pages	4 Pages			Exhib	Exhibit R-2 (PE 0605879A))605879A)	

RDT&E BUDGET ITEM JUST		20-15-M-5	NO NO NO	FICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE	March 1996	G
BUDGET ACTIVITY 6 - Management Support	de tradition de la companya de la co	en e	PE NE	PE NUMBER AND TITLE 0605879A Oper Engineering	пт <u>ге</u>)peration	ENUMBER AND TITLE 0605879A Operation of Utilities & Other Engineering	es & Oth	5	<u>a</u> ≥	PROJECT M4UU
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	The state of the s	Cost to Complete	Total Cost
M4UU Real Property Services - COE	0	0	4614	4769	4944	5117	5296		Continuing	Continuing Continuing
AND THE PROPERTY OF THE PROPER	and the state of the spirit of		on Personal grayers assert Polishing of P	The same and the same of the s	Appendix and a finish the property services as the control of the property of the control of the	Service of the servic				

A. Mission Description and Budget Item Justification; Project M4UU - Operation of Utilities and Other Engineering - COE: Finances the operation of utilities and other engineering services for U.S. Corps of Engineers Laboratories, i.e., Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research and Engineering Laboratories (CRREL); Hanover, NH; Construction Engineering Research Laboratory (CERL), Champaign, IL; and Topographic Engineering Center (TEC), Alexandria,

FY 1995 Accomplishments: Program funded in Program Element 0605896A.

FY 1996 Planned Program: Program funded in Program Element 0605896A.

FY 1997 Planned Program: • 1103 Waterways Experiment Station, Vicksburg, MS

•	1154	1154 Cold Regions Research and Engineering Laboratories; Hanover, NH
•	1112	1112 Construction Engineering Research Laboratory, Champaign, IL
•	1245	1245 Topographic Engineering Center, Alexandria, VA
Total	4614	
B Project Change Summary	Change	Summary FY 1995 FY 1996

FY 1997 0					+4614	,	4614	
FY 1996 0							0	
FY 1995 0							0	
B. <u>Project Change Summary</u> Previous President's Budget (FY 1996)	Appropriated Amount (FY 1995)	Adjustments to FY 1995	Appropriated Amount (FY 1996)	Adjustments to FY 1996	Adjustments to Budget year (FY 1997) since	FY 1996 President's Budget	Current President's Budget Submit	

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Project M4UU

Exhibit R-2 (PE 0605879A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA.	TION S	1EET (R	-2 Exhi	bit)		DATE N	March 1996	9
вирсет Астіvітү 6 - Management Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Resea Development, Testing & Evaluation	rations - g & Eval	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	h,		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	294085	310822	216649	205297	208512	207196	212256		Continuing	Continuing
M0ZZ Base Operations - Army Materiel Command (AMC) Test Ranges	185024	192211	143043	135950	141028	140814	144965		Continuing	Continuing
M1ZZ Base Operations - AMC Major Subordinate Commands and Laboratories	90485	101902	61588	57687	57551	56325	57160		Continuing	Continuing
M4ZZ Base Operations - Corps of Engineers	18576	16709	12018	11660	9933	10057	10131		Continuing	Continuing

of post supply functions; (2) direct and general maintenance activities; (3) operation and maintenance of transportation equipment and local transportation; (4) operation of maintaining U.S. Army RDTE installations, laboratories, test ranges and a significant tenant/satellite population. BASEOPS activities and functions include: (1) operation attached to the installation; (9) automation activities; (10) reserve component support; (11) development and administration of morale, welfare and recreation facilities and program, providing salaries and related personnel benefits for authorized civilian personnel and associated administrative support functions outlined above. FY 1996 and laundry and dry cleaning plants and contractual services where Army-owned plants are not operated; (5) Army food service program; (6) support to military and civilian operations; (14) Defense Finance and Accounting Service (DFAS); (15) contracting operations; and (16) records management and publications. This is a labor intensive personnel; (7) operation and administration of unaccompanied personnel housing; (8) command element activities required for commanding all Army units assigned or beyond includes a plus-up for DFAS operations. FY 1997 provides austere funding level for continued base operation and realignment of "J" Operation of Utilities and "M" Other Engineering to 0605879A, Operation of Utilities and Other Engineering. Includes effort directed toward support of installations or operations required for Mission Description and Budget Item Justification: The Base Operations (BASEOPS) program finances those activities and functions necessary for operating and activities along with quality of life initiatives for the military and their families; (12) police and security services and counterintelligence; (13) resource management general research and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605896A)

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RDT&E BUDGET ITEM JUST	EM JUS	TFICAL	TON ST	HEET (R	TIFICATION SHEET (R-2 Exhibit)	4		DATE	March 1996	(0)
BUDGET ACTIVITY	energy and the second s	ACTORIONAL DAMANCON VIOLENCIA CONTROLLO DE MINIMONTO	PE N	PE NUMBER AND TITLE	NTLE				P	PROJECT
6 - Management Support			090	5896A E	0605896A Base Operations - Research,	rations -	Researc	-	2	M0ZZ
			Dev	/elopmer	Development, Testing & Evaluation	g & Eval	uation			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M0ZZ Base Operations - Army Materiel Command (AMC) Test Ranges	ind 185024		192211 143043	135950	141028	140814	144965		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: Finances installation management for operating and maintaining technical test ranges assigned to the U.S. Army Range, NM. Provides for the test infrastructure base support along with common service base support to over 100 tenants and satellites served by the four TECOM Major Test and Evaluation Command (TECOM), i.e., Yuma Proving Ground, AZ; Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; and White Sands Missile Range & Test Facility Bases (MRTFB) FY 1995 Accomplishments: This project funds BASEOPS activities and functions for TECOM Test Ranges and over 100 tenant/satellite activities. Funds Civilian Illness and Injury Compensation costs. Base Operations infrastructure included fixed costs for payroll and utilities required to provide support for technical testing, diverse Army R&D tenants, and a principal training mission at the Ordnance Center and School, as follows:

Aberdeen Proving Ground Support Activity, MD

Dugway Proving Ground, UT 19822

White Sands Missile Range, NM 50759

Yuma Proving Ground, AZ 18319

85024 Total

infrastructure includes fixed costs for payroll and utilities required to provide support for technical testing, diverse Army R&D tenants, and a principal training mission at FY 1996 Planned Program: This project funds BASEOPS activities and functions for TECOM Test Ranges and over 100 tenant/satellite activities. Base Operations the Ordnance Center and School.

- Aberdeen Proving Ground Support Activity, MD 98356
 - Dugway Proving Ground, UT 20062
- White Sands Missile Range, NM 51670
 - Yuma Proving Ground, AZ 19655
- Above funding includes specific projects below:
- Civilian Illness and Injury Compensation Costs.
 - Defense Finance and Accounting Services
- Military Police (MP) conversion to civilian police/guards (partial workyears)

Small Business Innovation Research (SBIR/Small Business Technology Transfer (STTR) 1019

Project M0ZZ

Page 2 of 7 Pages

Exhibit R-2 (PE 0605896A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	R-2 Exhibit)	ге March 1996
вирбет Астіvity 6 - Management Support	PE NUMBER AND TITLE 0605896A Base Development, T	PENUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	PROJECT MOZZ
FY 1996 Planned Program: (continued) • 1449 Revised Economic Assumption not available for execution Total 192211	ជ		
FY 1997 Planned Program: Effective FY97 operations of utilities and other engineering support funds will transfer to the new PE 65879. This project funds BASEOPS activities and functions for TECOM Test Ranges and tenant/satellite activities. Base Operations infrastructure includes fixed costs for payroll as well as personnel costs associated with downsizing and re-engineering to civilian workforce. Program provides support for technical testing, diverse Army R&D tenants, and a principal training mission at the Ordnance Center and School, as follows: 6 88863 Aberdeen Proving Ground Support Activity, MD 15915 Dugway Proving Ground, UT 11430 White Sande Missile Range NM	r engineering suppo s and tenant/satellite s ilian workforce. Prog	rt funds will transfer to the new PE 658 ictivities. Base Operations infrastructure igram provides support for technical testing	s79. includes fixed costs for payroll g, diverse Army R&D tenants,
	y, Watertown, MA to police/guards (143 w	Aberdeen Proving Ground, MD. (BRAC orkyears)	(Action)
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 +435	FY 1996 205090	<u>FY 1997</u> 208624	
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since	194108 -1897	-65581	
FY 1996 President's Budget Current President's Budget Submit	192211	143043	
Project M0ZZ	Page 3 of 7 Pages	Exhibit R-	Exhibit R-2 (PE 0605896A)

RDT&E BUDGET ITEM JUST			TONS		IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	ဖ
BUDGET ACTIVITY 6 - Management Cusposet			PE NI	PE NUMBER AND TITLE	TITLE					PROJECT
			De	relopmer	Development, Testing & Evaluation		researc uation	56 ###		771.10
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M1ZZ Base Operations - AMC Major Subordinate Commands and Laboratories	90485	101902	61588	57687	57551	56325	57160		Continuing	Continuing Continuing

Arsenal, NJ; and Soldier Systems Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), MA. Provides for the infrastructure A. Mission Description and Budget Item Justification: Finances installation management for operating and maintaining other U.S. Army Materiel Command RDTE installations and laboratories, i.e., Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny base support along with common service base support to tenants and satellites.

FY 1995 Accomplishments: Continues to fund the BASEOPS activities and functions for the AMC RDTE Major Subordinate Command installations, laboratories and tenant/satellite activities. The current program reflects a restoral of minimum essential funding. Funding by installation is as follows:

- 43858 ARDEC, Picatinny Arsenal, NJ.
- 33798 ARL, Adelphi, MD
- 12829 SSCOM, Natick, MA
 - Total 90485

FY 1996 Planned Program: Continues to fund the BASEOPS activities and functions for the AMC RDTE Major Subordinate Command installations, laboratories and tenant/satellite activities. The FY 1996 program reflects minimum essential funding. Funding by installation as follows:

- 41404 ARL, Adelphi, MD
- 40851 ARDEC, Picatinny Arsenal, NJ
 - 16894 SSCOM, Natick, MA
 - 2010 SBIR/STTR
- 743 Revised Economic Assumption not available for execution
- Total 101902

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Project M1ZZ

Page 4 of 7 Pages

Exhibit R-2 (PE 0605896A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION S	HEET (R		DATE March 1996
виреет АСТІVITY 6 - Management Support	PE 1 06 De	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	PROJECT , M1ZZ
FY 1997 Planned Program: Effective FY97 operations of utilities and other engineering support funds will transfer to the new PE 0605879A. Continues to fund the BASEOPS activities and functions for the AMC RDTE Major Subordinate Command installations, laboratories and tenant/satellite activities. The FY 1997 program reflects minimum essential funding. As indicated by the outyear profiles, the workforce and infrastructure support will be reduced in line with the Army's downsizing plans. Funding by installation as follows: 22038 ARL, Adelphi, MD 27027 ARDEC, Picatinny Arsenal, NJ 12523 SSCOM, Natick, MA Total 61588	and other engine ? RDTE Major Su e outyear profiles	eering suppor ibordinate Con s, the workforc	lities and other engineering support funds will transfer to the new PE 0605879A. AMC RDTE Major Subordinate Command installations, laboratories and tenant/satellite activities. The Iby the outyear profiles, the workforce and infrastructure support will be reduced in line with the Army's	605879A. enant/satellite activities. The FY duced in line with the Army's
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	FY 1995 92137 90452 +33	FY 1996 107054	<u>FY 1997</u> 87511	
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1906 President's Budget		102908 -1006	-25923	
Current President's Budget Submit	90485	101902	61588	
Project M1ZZ	Page 5 c	Page 5 of 7 Pages	Exhibit	Exhibit R-2 (PE 0605896A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		TIFICAL	TON SE	A LUI	-2 Exhil	oit)		DATE	March 1996	G
BUDGET ACTIVITY			PE NC	PE NUMBER AND TITLE	TLE				P	PROJECT
6 - Management Support			090	5896A B	ase Opel	0605896A Base Operations - Research,	Research	ľ,		M422
			Dev	relopmen	ıt, Testini	Development, Testing & Evaluation	ation			
COST (In Thousands)	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
(11) 11003811(13)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		Complete	
M4ZZ Base Operations - Corps of Engineers 18576	18576	16709	12018	16709 12018 11660 9933 10057	9933	10057	10131		Continuing	Continuing Continuing

Corps of Engineers RDTE laboratories: Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research and Engineering Laboratories (CRREL), Hanover, A. Mission Description and Budget Item Justification: Finances BASEOPS activities and functions necessary for operating and maintaining the following U.S. Army NH; Construction Engineering Research Laboratory (CERL), Champaign, IL; and Topographic Engineering Center (TEC), Alexandria, VA.

FY 1995 Accomplishments: Continue to fund the BASEOPS activities and functions for the U.S. Army Corps of Engineers RDTE, A Laboratories, at the following locations:

CERL, Champaign, IL CRREL, Hanover, NH TEC, Alexandria, VA WES, Vicksburg, MS 5150 4363 4577 Total FY 1996 Planned Program: Continues to fund the BASEOPS activities and functions for the U.S. Army Corps of Engineers RDTE, A Laboratories, at the following

CRREL, Hanover, NH WES, Vicksburg, MS 3876 4073 locations:

CERL, Champaign, IL 3912

TEC, Alexandria, VA 4358 373 117

SBIR/STTR

Revised Economic Assumption not available for execution



Page 6 of 7 Pages

Project M4ZZ

Exhibit R-2 (PE 0605896A)



RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)		DATE March 1996
вирсет АСТІVITY 6 - Management Support	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	PROJECT I, M4ZZ
 FY 1997 Planned Program: Effective FY97 operations of utilities and other engineering support funds will transfer to the new PE 65879. Continues to fund the BASEOPS activities and functions for the U.S. Army Corps of Engineers RDTE, A Laboratories 2994 CERL, Champaign, IL 3005 CRREL, Hanover, NH 3147 TEC, Alexandria, VA 2872 WES, Vicksburg, MS Total 12018 	lities and other engineering support funds will tran U.S. Army Corps of Engineers RDTE,A Laboratories	ort funds will transfer to the new PE 6 TE,A Laboratories	.5879.
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1996 Adjustments to FY 1996 Adjustments to Budget year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	FY 1996 17834 16878 -169 16709	FY 1997 16818 -4800 12018	
Project M4ZZ	Page 7 of 7 Pages	Exhibit	Exhibit R-2 (PE 0605896A)

RDT&E BUDGET ITEM JUSTI			FICATION SHEET (R-2 Exhibit)		-2 Exhi	bit)	and to the second	DATE M	March 1996	ဖ
BUDGET ACTIVITY 6 - Management Support			PENU 060 and	PE NUMBER AND TITLE 0605898A Manage and Development)	пте Janagem ment)	ent Head	PENUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	(Resear	-	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	24404	15334	4801	4822	4727	5138	5128		Continuing	Continuing
MM03 Command Headquarters - MRDC	5074	3690	0	0	0	0	0		Continuing	Continuing
MM65 Army Research Laboratory	7741	4837	4801	4822	4727	5138	5128		Continuing	Continuing
M831 AKAMAI	11589	6807	0	0	0	0	0	The state of the s	0	0
The second of th	CALIFORNIA DE MANAGORIA DE COMPONIDO POR LA COMPONIDA DE COMPONIDO DE	Marine and Compared States of Marine States on the Compared States of the Compared States o	The state of the s							

resources (manpower and dollars), and (5) review and evaluation of program performance. Provides salaries and related personnel benefits for authorized civilian personnel and the associated administrative support (travel, supplies and equipment). Includes research and development effort directed toward support of installations or operations Mission Description and Budget Item Justification: This program funds the Research, Development, Test and Evaluation (RDTE) Army Management Headquarters Detrick, MD. This program provides for (1) the development of policy and guidance, (2) long-range planning, (3) programming and budgeting, (4) management of Activities (AMHA) for the U.S. Army Research Laboratory (ARL), Adelphi, MD, and the U.S. Army Medical Research and Materiel Command (USAMRMC), Ft required for general research and development use and therefore is appropriate to Budget Activity 6.

Page 1 of 5 Pages

1288

Exhibit R-2 (PE 0605898A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	ION SI	HEET (R	-2 Exhil	oit)		DATE N	March 1996	9(
BUDGET ACTIVITY 6 - Management Support			PE NU 060 and	PE NUMBER AND TITLE 0605898A Manage and Development)	пт∟Е Ianagem oment)	ent Head	quarters	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)		PROJECT MM03
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
MM03 Command Headquarters - MRDC	5074	3690	0	0	0	0	0		Continuing	Continuing
A. Mission Description and Budget Item Justification: This project provides the funding for management headquarters activities at the U.S. Army Medical Resear Materiel Command (USAMRMC), Ft Detrick, MD, to (1) develop medical RDTE program policy and guidance; (2) perform long-range planning, programming and budgeting; (3) provide the management of resources; and (4) conduct program performance review and evaluation for the RDTE appropriation. This project provides salaries and related personnel benefits for authorized civilian personnel and the administrative support (temporary duty travel, operating supplies and equipment).	tion: This p to (1) develor; and (4) con: civilian pers	roject provic p medical RI duct progran onnel and th	les the fund OTE progra η performan e administra	ing for mana m policy anc ce review ar	gement heac l guidance; (' ld evaluation' (temporary	lquarters act 2) perform 1 for the RD´ duty travel,	ivities at the ong-range p FE approprii operating su	U.S. Army lanning, protation. This pupplies and e	This project provides the funding for management headquarters activities at the U.S. Army Medical Research and develop medical RDTE program policy and guidance; (2) perform long-range planning, programming and 4) conduct program performance review and evaluation for the RDTE appropriation. This project provides an personnel and the administrative support (temporary duty travel, operating supplies and equipment).	earch and nd des
 FY 1995 Accomplishments: 5074 Funded the operation of the USAMRMC headqua sustain military medical technological superiority. Total 5074 	SAMRMC h ological supe	eadquarters rriority.	activities wl	hich adminis	ters the med	ical research	, developme	ent and acqu	eadquarters activities which administers the medical research, development and acquisition program to riority.	am to
 FY 1996 Planned Program: 3581 Fund the operation of the USAMRDC headquarters activities which administers the medical research, development and acquisition program to sustain military medical technological superiority. 83 Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) 26 Revised Economic Assumption not available for execution Total 3690 	AMRDC head I superiority. search (SBIF on not availat	dquarters act ty/Small Bus ile for execu	ivities whichiness Technition	h administer ıology Trans	s the medica fer (STTR)	l research, d	evelopment	and acquisit	ion program	to sustain
FY 1997 Planned Program: Program resources realigned to PE 0605801A.	aligned to PE	; 0605801A.								
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount Adjustment to FY 1995		FY 1995 3877 3877 +1197		FY 1996 3795	FY 1997 3743					
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996	960			3728 -38	-3743					
Current President's Budget Submit		5074		3690	0					
Project MM03			Page 2 of 5 Pages	5 Pages			Exhib	Exhibit R-2 (PE 0605898A))605898A)	

RDT&E BUDGET ITEM JUST	SIN ME		TIONS	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Ma	March 1996	(0
BUDGET ACTIVITY 6 - Management Support			PENI 060 and	PE NUMBER AND TITLE 0605898A Manage and Development)	пте Nanagem oment)	ent Head	quarters	ENUMBER AND TITLE 3605898A Management Headquarters (Research and Development)		PROJECT NINGS
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	-	Cost to Complete	Total Cost
MM65 Army Research Laboratory 7741	7741	4837	4801	4822	4727	5138	5128		Continuing Continuing	Continuing

(ARL), Adelphi, MD, to (1) develop RDTE program policy and guidance; (2) perform long range planning, programming and budgeting; (3) provide for the management of A. Mission Description and Budget Item Justification: This project provides the funding for management headquarters activities at the U.S. Army Research Laboratory resources; and (4) conduct program performance review and evaluation. This project provides for the salaries and related personnel benefits for the authorized civilian personnel and the administrative support (temporary duty travel, operating supplies and equipment).

FY 1995 Accomplishments:

7741 Funded the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.

Total 7741

FY 1996 Planned Program:

- 4799 Fund the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological
 - superiority.
 - 1 SBIR/STTR
- 37 Revised Economic Assumption not available for execution

Total 4837

FY 1997 Planned Program:

4801 Fund the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological

superiority.

Total 4801

Project MM65

Exhibit R-2 (PE 0605898A)

Page 3 of 5 Pages



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATIO	N SHEET (R-2 Exhibit)	DATE March 1996	1996
вирдет АСТІМІТУ 6 - Management Support		PE NUMBER AND TITLE 0605898A Manage and Development)	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	rters (Research	PROJECT MM65
B. Project Change Summary Previous President's Budget(FY 1996) Appropriated Amount Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996	<u>FY 1995</u> 7777 7741	<u>FY 1996</u> 4971 4885 -48	FY 1997 4803		
Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	7741	4837	-2 4801		
Project MM65	Pc	Page 4 of 5 Pages		Exhibit R-2 (PE 0605898A)	8A)
		1291			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		TECA	TON SE		2-2 Exhil	bit)		DATE M	March 1996	မွှ
BUDGET ACTIVITY 6 - Management Support			PENU 060 and	PE NUMBER AND TITLE 0605898A Manage and Development)	PENUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	ent Head	lquarters	Resear	Commence of the Control of the Contr	PROJECT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M831 AKAMAI	11589	6807	0	0	0	0	0		0	0
A. Mission Description and Budget Item Justification: This is a state-of-the art tele-imaging advanced development effort to implement the medical diagnostic imageneric (MDIS) system at Tripler Army Medical Center, HI, for tele-imaging throughout the Pacific Rim and to further the proliferation of clinically effective time and distance independent medicine techniques through the use of state-of-the-art telecommunications	ation: This snter, HI, for the use of sta	is a state-of-t tele-imaging te-of-the-art	he art tele-ii ; throughout telecommur	maging adve t the Pacific nications	nnced develo Rim and to fi	pment effort urther the pr	t to impleme oliferation o	nt the medic of clinically o	a state-of-the art tele-imaging advanced development effort to implement the medical diagnostic imaging le-imaging throughout the Pacific Rim and to further the proliferation of clinically effective time and -of-the-art telecommunications	imaging : and
FY 1995 Accomplishments: • 6632 Expand number of spokes and continue hub	d continue hu		infrastructure development	ment	•					OCC 900 September 1980 September 198

⋖	A. Mission Description and Budget Item Justilication: This is a state-of-the art tele-imaging advanced development effort to implement the medical dis	ging advanced development effort to implement the medical di
ร	support (MDIS) system at Tripler Army Medical Center, HI, for tele-imaging throughout the Pacific Rim and to further the proliferation of clinically effect	Pacific Rim and to further the proliferation of clinically effec
Ð	distance independent medicine techniques through the use of state-of-the-art telecommunications	tions
	FY 1995 Accomplishments:	
49	• 6632 Expand number of spokes and continue hub infrastructure development	at
-	• 4957 Provide additional research planning guidance to Georgetown University and develop technology assessment constructs.	sity and develop technology assessment constructs.
	Total 11589	

FY 1996 Planned F		
•	8099	Expand number of spokes and continue hub infrastructure development.
•	152	SBIR/STTR
9	47	Revised Economic Assumption not available for execution
Total	6807	

FY 1997 Planned Program: No planned program.

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY 1996)	11838	0	0	
Appropriated Amount (FY 1995)	11589			
Adjustment to FY 1995	0			
Appropriated Amount (FY 1996)		6877		
Adjustment to FY 1996		-70		
Adjustments to Budget Year (FY 1997) since FY 1996				
President's Budget				
Current President's Budget Submit	11589	2089	0	
Project M831	Pas	Page 5 of 5 Pages		Exhibit R-2 (PF 0605898A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA ⁻	FION SF	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t.		PE NI 010	PE NUMBER AND TITLE 0102419A Aerostat Joint Program Office	пт∟Е ∖erostat .	Joint Pro	gram Off	ice	d C	PROJECT DE55
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE55 Aerostat Program	0	12993	38940	106592	134940	110091	114158		Continuing	Continuing Continuing

directed the establishment of the Joint Aerostat Program Management Office (PMO) for Cruise Missile Defense (CMD) and provided the funding for FY 96-01. This is a expand the battlefield Commander's surveillance and engagement capability against cruise missiles and other low flying aircraft by extending the battle space for systems multiservice effort with the Army as the lead service. The PMO is assigned to the AAE with operational control assigned to the U. S. Army Space and Strategic Defense precision track for broad area defense against land attack cruise missiles. Aerostats are theater based systems employing advanced technologies with specific attention to A. Mission Description and Budget Item Justification: The Under Secretary of Defense (Acquisition and Technology) and the Army Acquisition Executive (AAE) CMD. Aerostat sensors provide the OTH surveillance/precision tracking for the Air Directed Surface to Air Missile (ADSAM) concept. The role of the aerostat is to Command. The program mission is to maximize the battle space of land, sea and air based missiles systems by providing Over-the-Horizon (OTH) surveillance and such as Patriot, Medium Air Defense System/Corps SAM and Aegis.

contract to develop two aerostat systems. An option to develop an additional two deployable prototypes may be exercised once successful end-to-end system testing is contractors. The most promising concept(s) will be further developed as proposals for the Development phase of the program. The selected proposal(s) will be put on Acquisition Strategy: The Joint Aerostat PMO will execute a Definition Phase by soliciting CMD architecture concepts that employ aerostats from a select group of

FY 1995 Accomplishments: Project not funded in FY 1995

FY 1996 Planned Program:

- 8000 Execute the Definition Phase of the program.
 - 1743 Establish and operate aerostat testbed.
- 1250 Establish Joint Program Management Office.
 - 1000 Program management support.
 - 1000 Risk reduction program.
- Total 1299

Page I of 3 Pages

Project DE55

Exhibit R-2 (PE 0102419A)

RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit)	Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102419A Aero	> ⊓⊓∟E Aerostat Joint Program Office	PROJECT THICE DE55
 FY 1997 Planned Program: 21800 Initiate Development Phase of the program. 6140 Conduct Test and Evaluation (Testbed) 4000 Joint Program Management Office. 4000 Program management support. 3000 Risk reduction program. Total 38940			
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	FY 1996 0	FY 1997 0	
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	12993		
FY 1996 President's Budget Current President's Budget Submit	12993	38940 38940	
Change Summary Explanation: Funding: FY 1996: OSD realigned funds from other lower priority programs. FY 1997: OSD realigned funds from other lower priority programs.	rams. (Reprogramming) ams.	ng)	
C. Other Program Funding Summary EY 1995 EY 1996 EY 1996 EY 1996 EY 1996	FY 1997 FY 1998	FY 1999 FY 2000 FY 2001	To Total Compl Cost
FY 1995	FY 1996	FY 1997	0000
Program Office established Program Plan to OSD Award up to 4 contracts for Definition Phase	2 X X	4 X	4
Award Contract(s) for system development		×	
Project DE55	Page 2 of 3 Pages	EX	Exhibit R-2 (PE 0102419A)





RDT&E PROGRAM ELEMENT	/PROJECT	COST	REAKD	BREAKDOWN (R-3)	3) DATE	March 1996	g
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AN 0102419A		tat Joint	ЭТІТLE Aerostat Joint Program Office		PROJECT DE55
 A. Project Cost Breakdown Product Development Test and Evaluation Program Management Support Total 	FY 1995 0 0 0 0	E E	FY 1996 8000 500 4493 12993	EY 1997 21800 6140 11000 38940			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
TBD C/CPFF 2nd Qtr 97 TBD Support and Management Organizations	TBD	0	0	8000	21800	Cont	Cont
Aerostat PMO MIPR		0	0	2250	7000	Cont	Cont
Support Contracts C/CP TBD Test and Evaluation Organizations		0	0	2243	4000	Cont	Cont
OGAs MIPR Test Bed - TBD C/FFP 3rd Qtr 96 TBD	TBD	0 0	0	200 300	5140 1000	Cont	Cont
Government Furnished Property - None							
Subtotal Product Development Subtotal Support and Management		0 0	0 0	8000 4493	21800	Cont	Cont
Subtotal Test and Evaluation Total Project		00	00	500 12993	6140 38940	Cont	Cont
Project DE55	P_{i}	Page 3 of 3 Pages	es		Exhibit R-3 (Exhibit R-3 (PE 0102419A)	

RDT&E BUDGET ITEM JUST	EM JUS	L	IFICATION SHEET (R-2 Exhibit)		-2 Exhi	bit)		DATE	March 1996	(6)
BUDGET ACTIVITY 7 - Operational System Development		A THE TRANSPORT OF THE CONTRACT OF THE CONTRAC	PE NU 020	PE NUMBER AND TITLE 0203726A Adva	idvanced	PENUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data	tillery Ta	ctical Da	ıta	
			Sys	System					e i manufatt de l'imite de de propriet en traction	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	50737	35420	39497	9438	7129	3372	3350		88081	535754
D322 AFATDS Development	47470	35420	34564	4570	2980	1538	3350		88081	516703
D2ET AFATDS Operational Test	3267	0	4933	4868	4149	1834	0		0	19051

support assets (mortars, close air support, naval gunfire, attack helicopters, offensive electronic warfare, field artillery cannons, rockets and guided missiles) in the execution of close support, counterfire, interdiction, suppression of enemy air defense and deep operations. AFATDS will automatically implement detailed commander's guidance in the automation of operational planning, movement control, targeting, target value analysis and fire support planning. These projects support development of a replacement System (ABCS) architecture in support of close, rear and deep operations, fire planning and the coordination and employment of all service/combined fire support assets to support command, control and communications (C3) system. As a battle management system, AFATDS will provide automated fire support in the Army Battle Command complement the commander's scheme of maneuver. AFATDS will accomplish this by providing fully automated support for planning, coordination and control of all fire A. Mission Description and Budget Item Justification: The Advanced Field Artillery Tactical Data System (AFATDS) will broaden and modernize the US Army fire system for the existing Tactical Fire Direction System (TACFIRE) and Initial Fire Support Automated System (IFSAS) systems and are appropriately funded in Budget Activity 7.

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Exhibit R-2 (PE 0203726A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	TIFICATION SHEET (R-2 Exhibit)	2 Exhil	bit)	O.	DATE M	March 1996	9
вироет астічіт 7 - Operational System Development	Į,		PE NI 020 Sys	PE NUMBER AND TITLE 0203726A Adva System	nтιε \dvanced	l Field Ar	e number and title 0203726A Advanced Field Artillery Tactical Data System	tical Da		^э RОЈЕСТ D322
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D322 AFATDS Development	47470	35420	34564	4570	2980	1538	3350		88081	516703

also utilize AFATDS. AFATDS will interoperate with Navy and Air Force Command and Control weapon systems as well as the German fire support system (ADLER), the tailored to perform the fire support command, control and coordination requirements at any level of command. This will permit variable command and control relationships and full fire support functionality at all echelons of field artillery and maneuver, from corps to battery or company in support of all levels of conflict. The Marine Corps will Command and Control System (ATCCS) Common Hardware/Software (CHS)) employed in varying configurations at different operational facilities (or nodes)) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. Both hardware and software will be capable of being The project is composed of a common suite of hardware (Army Tactical A. Mission Description and Justification: Project D322 - AFATDS Development: French fire support system (ATLAS) and British fire support system (BATES).

support planning, target nomination, order of fire, and meteorological/survey operations. AFATDS Releases '97, '98 and '99, previously identified as Version 2, will add Acquisition Strategy: AFATDS software will be developed in incremental releases. The previously identified software versions have been redesignated as AFATDS '97, munitions. Completion of AFATDS '00, previously identified as Version 3, will result in automation of all the required tasks to meet the objective system, including full ment," development of any release is not dependent on completion of another release. Version 1, which is complete, automates 51% of the required tasks including fire '98, '99 and '00 to better reflect the current plan to release increments of software functionality in each program year. Under the concept of software "spiral developfire support planning, target acquisition support and field artillery mission support. Additionally, the completed software will utilize the Army Common Operating additional functions, providing automated capabilities for 73% of the required tasks including fire support sensor planning, weather/terrain analysis, and additional Environment (ACOE) architecture.

FY 1995 Accomplishments:

- 1900 Prepared for Initial Operational Test and Evaluation (IOTE)
- 21100 Completed Version 1 and Supported Testing
- 22270 Continued AFATDS '97 and AFATDS '98 software development
 - 2200 Initiated Air Defense/AFATDS Integration efforts
 - otal 47470

1297

Page 2 of 9 Pages

Project D322

Exhibit R-2 (PE 0203726A)

	RDT&E BUDGET ITEM JUSTIFICAT	FICATION SHEET (R-2 Exhibit)	R-2 Exhibit)	DATE March 1996
вирсет Астіміту 7 - Operational S	зирсет АстіvітУ 7 - Operational System Development	PE NUMBER AND TITLE 0203726A Adva System	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	PROJECT Data D322
FY 1996 Planned Program:	st Army Systems Acquisition Review ue AFATDS '97 and '98 software dev FATDS '99 software development stTR	Council (ASARC) (Milestone III) elopment ble for execution	(1)	
FY 1997 Planned Program:	ogram: Complete AFATDS '97 and Support Testing Prepare for AFATDS '97 Operational Testing Continue AFATDS '98 and '99 software development			
B. Project Change Summary Previous President's Budget (FY 96) Appropriated Amount (FY 95)	<u>a</u>	EY 1996 7 39422 0	F <u>Y 1997</u> 36483	
Adjustments to FY 95 Appropriated Amount (FY 96) Adjustments FY 96 Adjustments to Budget Year (FY97) since	5 +3400 (FY 96) t Year (FY 97) since	0 35778 -358	-1919	
Fr 20 Fresident's Budget Submit	inger inget Submit 47470	0 35420	34564	
Change Summary Explanation: Funding: FY 95 incres FY 96 (-364 FY97 (-1007	Explanation: FY 95 increased (+3400) for integration and operational test support. FY 95 increased (+3400) for integration and operational test support. FY 96 (-3644) Congressional cut and (-358) reduction is amount that has been proposed for rescission. FY 97 (-1007) was reprogrammed to D2ET for operational test support and (-912) reduction due to revised inflation rates.	test support. amount that has been j I test support and (-91	oroposed for rescission. 2) reduction due to revised inflation ra	· · · · · · · · · · · · · · · · · · ·
Project D322		Page 3 of 9 Pages	Exhik	Exhibit R-2 (PE 0203726A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SOL ME	TIFICA	HON SH	EET (R	-2 Exhit	oit)		DATE Marc	March 1996	
вироет астилту 7 - Operational System Development			PE NUMBER 0203726 System	PE NUMBER AND TITLE 0203726A Adva System	π∟E dvanced	Field An	illery Ta	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	PROJEC D322	PROJECT D322
C. Other Program Funding Summary FY 1995 OPA - B28600 Spares (BA9708/MA9708/BS9708) (*Total includes prior year sunk)	FY 1995 9631 2256 r year sunk)	FY 1996 28478 3141	FY 1997 31569 3084	FY 1998 35155 2012	FY 1999 38482 2554	FY 2000 39948 3001	FY 2001 41882 2977	2.52	To <u>Compl</u> 252697 14517	Total <u>Cost</u> 495877 35099
Profile	FY 1995 2 3	4	F)	FY 1996 2 3	4 1	FY 1997 2 3	7 4			
Resume V2.0 System Design Review (V2.0) V1 IOTE V1 First Unit Equipped (FUE) ASARC - Mile III Begin Fielding Total Force Release AFATDS '97	* ×	* *	**		×		×			
*Milestone Complete										
Project D322			Page 4 of 9 Pages	Pages			Exhibi	Exhibit R-2 (PE 0203726A)	'26A)	

	RDT&E PROGRAM ELEMENT/P	RAMEL		ROJECT COST BREAKDOWN (R-3)		EAKDO		3)	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	System De	velopmen			PE NUMBER AND TITLE 0203726A Adva System	AND TITLE A Advan	ced Field	Artillery T	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	PROJECT D322
A. Project Cost Breakdown Software Development Support Contracts In-House Support GFE Total	a kdown nt			EY 1995 27730 4204 6858 8678 47470	EX 1996 26135 2980 5128 1177 35420	<u>(1996</u> 26135 2980 5128 1177 35420	FY 1997 26030 2162 4372 2000 34564			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract	ion History and zations Contract	l Planning Inf	ormation							
Government Performing <u>Activity</u>	Method/Type or Funding <u>Vehicle</u>	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	o Total <u>te Program</u>
Product Development Organizations MX SS/CPAF	ent Organizatio SS/CPAF	ns 27 Apr 90		183334	99940	21330	24635	24830	12599	_
TBD Various, MX BOA STRICOM/FSATS	MIPR	FY 01 FY 87	34891 12092	63260 34891 12092	34891 9392	2700		į	63260	
COE/ATCCS ADCCS	MIPR MIPR	FY 95	10660	10660	4060	1500 2200	1500	1200	2400 0	0 10660 0 2200
Support and Management Organizations CSC/ARC C/CPFF Dec 9	gement Organi C/CPFF	zations Dec 92	11584	11584	4813	2164	1445	1348	1814	4 11584
PROGRAM MANAGEMENT: PM FATDS MATRIX					14894 15117	1600 2367	1458 2323	1417 2226	6190 5728	90 25559 28 27761
Misc Contracts CECOM					68311	2040	1386	814	2791	75342
yyboonia ata'a a saa a										
Project D322		the state of the s		Pa_{j}	Page 5 of 9 Pages	es.		Exh	Exhibit R-3 (PE 0203726A)	(A)





RDT&E PROGRAM ELEMENT/PROJECT	RAM ELI	EMENT/PR		COST BREAKDOWN (R-3)	REAKDO	WN (R-		DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development	velopmen	بد		PE NUMBER AND TITLE 0203726A Adva System	AND TITLE	ced Field	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	ctical Data	PROJECT D322	ЕСТ ,2
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete		Total Program
Lest and Evaluation Organizations OPTEC MISC. (Ft. Hood) MIPR				4000 1367	1924 967	322 1174	729	7	400	6246 4637
Government Furnished Property										
Item Description	Award or Obligation <u>Date</u>	n Delivery <u>Date</u>		Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete		Total <u>Program</u>
Product Development Property LCU, TCU, PSE Support and Management Property: None	: None			23755	8678	1177	2000	75	5486	41096
Test and Evaluation Property TEST HARDWARE				18041						18041
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation				172038 103135 23408 298581	36408 8171 2891	27312 6612 1496 35420	28030 5805 729 34564	83745 . 16523 400		347533 140246 28924 516703
Project D322			Pc	Page 6 of 9 Pages	es.		Exhibi	Exhibit R-3 (PE 0203726A)	(6A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	THICA	NO NO		2 Exhi	bit)		DATE	March 1996	ဖ
BUDGET ACTIVITY		Andrea Salata	PE N	PE NUMBER AND TITLE	TITLE		Section of the sectio			PROJECT
7 - Operational System Development	ogen)		020	3726A A	Advanced	Field A	0203726A Advanced Field Artillery Tactical Data	ctical Da		02ET
			Š	System						and the second
			Andreas and the state of the second state of t	CONTRACTOR AND CONTRACTOR OF CONTRACTOR CONTRACTOR		AND			PARTY CONTRACTOR OF THE PARTY O	Charles and the state of the second second
(of a contract -1), FOOO	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
(iii iii) Iooo	Actival	Fetimate	Fstimate	Fefimate	Fefimate	Fetimate	Fetimate		Complete	

19051 Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2ET is restructured from within this PE (0203726A) and is A. Mission Description and Justification: Project D2ET - Operational Test: The project finances the direct costs of planning and conducting operational testing and Testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides evaluation of the Advanced Field Artillery Tactical Data System (AFATDS) by the Operational Test and Evaluation Command (OPTEC). AFATDS is an Acquisition Category (ACAT) I system with Initial Operational Tests and Evaluations (IOTEs) in FY 95 and FY 97 for Versions 1.0 and AFATDS '97 respectively. Operational 0 Estimate Estimate | Estimate | Estimate | 1834 4149 4868 4933 Estimate 3267 Actual D2ET AFATDS Operational Test not a new start.

Acquisition Strategy: Not Applicable

FY 1995 Accomplishments:

- 2298 Conducted Version 1.0 IOTE testing
- Evaluated Version 1.0 IOTE test results 642
- Completed IOTE unit (Test Players) preparation and conduct of Version 1.0 IOTE
 - Total

FY 1996 Planned Program: Project not funded in FY 1996

FY 1997 Planned Program:

- Conduct AFATDS '97 IOTE testing 3886 700
- Evaluate AFATDS '97 IOTE test results
- Complete IOTE unit (Test Players) preparation and conduct of AFATDS '97 IOTE

Project D2ET

Exhibit R-2 (PE 0203726A)

Page 7 of 9 Pages



PENMER AND TITLE PUDGET ACTIVITY PURPOSE NO. TITLE PUDGET ACTIVITY PURPOSE NO. TITLE PURPOSE NO. TITLE PURPOSE Advanced Field Artillery Tactical Data Publish Py 91 increased (+2765) for AFATIDS '97 IOTE and (-134) reduction due to revised inflation rates.	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	N SHEET (R-2 Exhib	it)	DATE March 1996	1996
FY 1995 FY 1996 FY 1997 1083 0 2302 1084 0 2409 1085 1088 0 2302 1086 1088 0 2409 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1088 1088 1086 1088 1086 1088	вирсет Астіvіту 7 - Operational System Development		PE NUMBER ANI 0203726A System	ЭТІТLE Advanced I	ield Artillery	Tactical Data	PROJECT D2ET
Innation: 95 increased (+249) for V1 IOT&E. 97 increased (+2765) for AFATDS '97 IOTE and (-134) reduction due to revised inflation rates. unding Summary: Not Applicable. FY 1995 FY 1996 FY 1997 1 2 3 4 1 2 3 4 1 2 3	B. Project Change Summary Previous President's Budget (FY 96) Appropriated Amount (FY 95) Adjustments to FY 95 Adjustments FY 96 Adjustments FY 96 Adjustments to Budget Year (FY 97) since FY 96 President's Budget Current President's Budget Submit	FY 1995 3083 3018 +249	FY 1996 0 0	FY 1997 2302 +2631 4933			
unding Summary: Not Applicable. FY 1995 FY 1996 FY 1997 1 2 3 4 1 2 3 X* X* 1 2 3	Change Summary Explanation: Funding: FY 95 increased (+249) for V1 IOT&E. FY 97 increased (+2765) for AFATDS '97 IOT	E and (-134) re	duction due to re	vised inflation r	ates.		
FY 1995 FY 1996 FY 1997 1 2 3 4 1 2 3 4 1 2 3 X*	C. Other Program Funding Summary: Not Applicable.						
	1	4 *X	FY 1996 2 3	1	x 1997 3	4 X	
Project D2ET Project D2ET Exhibit R-2	Project D2ET	Рав	ge 8 of 9 Pages		EX	Exhibit R-2 (PE 0203726A)	3A)

RDT&E PROGRAM ELEMENT/PRC	JECT C	OST BI	ZEAKD	ROJECT COST BREAKDOWN (R-3)	(2-3)	DATE March	1996
BUDGET ACTIVITY 7 - Operational System Development	enterente de la constitución de la	PE NUMBER AND TITLE 0203726A Adva System	AND TITLE	nced Fie	ld Artillery	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	PROJECT D2ET
A. <u>Project Cost Breakdown</u> Operational Test and Evaluation Total	FY 1995 3267 3267	FY	FY 199 <u>6</u> 0	FY 1997 4933 4933			
B. Budget Acquisition History and Planning Information:							
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None Support and Management Organizations: None	Project Office <u>EAC</u>	Total Prior to <u>FY 1995</u>	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations OPTEC			3267	0	4933	10851	19051
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			3267 3267		4933 4933	10851	19051 19051
Project D2ET	Pag	Page 9 of 9 Pages	es		Ē	Exhibit R-3 (PE 0203726A)	6A)
		1304					





RDT&E BUDGET ITEM JUS	EM JUS		TION SE	IEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t		PE NC 020	PE NUMBER AND TITLE 0203735A Com	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle Im	proveme	ent Prog	rams	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	107205	209131	197796	123522	54316	5262	0		0	1330325
D2TT Bradley A3 IOTE	0	0	2079	4315	5880	575	0		0	12849
D2UT Abrams IOTE	0	0	1460	696	0	0	0		0	2429
D280 Recovery Vehicle Improvement Program	6468	3000	3116	0	0	0	0		0	48335
D330 Abrams Improvement	10441	38047	70046	32415	1933	0	0		0	701896
D344 Fire Support Team Vehicle	13973	22559	20398	3818	0	0	0		0	60768
D371 Bradley Base Sustainment Program	76323	114638	87135	61952	32115	0	0		0	433386
D392 Armored Gun System Improvements	0	16269	0	0	0	0	0		0	16269
DC64 TRACTOR DUMP	0	14618	13562	20053	14388	4687	0		0	54393

Forward Looking Infrared (2nd GEN FLIR) capability to enhance operations and allow operation in conjunction with the Abrams Tank. These projects support development technological advancements and enhances the combat capability of today's force. The PE also provides combat effectiveness enhancements for the Abrams Tank through a series of product improvements to the current production vehicles. Additional improvements will provide the Bradley with a digital capability and Second Generation Mission Description and Budget Item Justification: This Program Element (PE) responds to deficiencies highlighted during Desert Storm, continues evolutionary of upgrades to current production vehicles and are appropriate to Budget Activity 7.

Page 1 of 28 Pages

Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUST		TIFICA	TION S	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	ဖွ
BUDGET ACTIVITY 7 - Operational System Development	ų.		PE NI 020	PE NUMBER AND TITLE 0203735A Com	ппс Sombat V	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	nproveme	ent Progr	and the second	PROJECT D2TT
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Cost to Total Cost
D2TT Bradley A3 IOTE	0	0	2079	4315	5880	575	0		0	12849

A. Mission Description and Budget Item Justification: This project provides for the operational testing (OT) of the Bradley A3 prototype, OT of pre-production vehicles, and generates a performance record in support of a Milestone III decision. Critical areas for test include command and control, sustainability, lethality, survivability, and mobility. This project is a new start in FY 97.

Acquisition Strategy: Not Applicable

FY 1995 Accomplishments: Program not funded in FY 95

FY 1996 Planned Program: Program not funded in FY 96

FY 1997 Planned Program:

Testing Support 2079

Total

B. Project Change Summary	FY 1995	FY 1996
Previous President's Budget (FY 1996)		
Appropriated Value (FY 1995)		
Adjustments to FY 1995 Appropriated Value		
Adjustments to Budget Year (FY 1997) since		

2079

FY 1997

2079

Change Summary Explanation:

Current Budget Estimate Submission

FY 1996 President's Budget

Funding: 2079 increase in FY 97; realigned from PE 23735, Project D371

Other Program Funding Summary	
ن	,

FY 2001	830270
FY 2000	259669
FY 1999	349050
FY 1998	157464
FY 1997	126886
FY 1996	
FY 1995	
	G80717)
	stainment (
	ley Base Su
	Brad

Total Cost 2959497

> 796170 Compl

Exhibit R-2 (PE 0203735A)

Project D2TT



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATIO	V SHEET (R-2 Exhibit)	DATE March 1996
вирбет астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	PROJECT ent Programs D2TT
D. Schedule Profile 1 2 3 Limited User Test 1 Limited User Test 2	3 4 1	FY 1996 FY 1997 X X X X	
Project D2TT	Pag	Page 3 of 28 Pages Exhib	Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TFICAT	SNO		Z Expi	oit)		DATE N	March 1996	96
BUDGET ACTIVITY 7 - Operational System Development)		PE NU 020	PE NUMBER AND TITLE 0203735A Com	отпе Combat Vehicle Improvement Programs	ehicle Im	proveme	ent Prog		PROJECT D2UT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D2UT Abrams IOTE	0	0	1460	696	0	0	0		0	2429
A. Mission Description and Budget Item Justification: This project funds a 1-2 vehicle limited user excursion to verify operational test (OT) and/or developmental test (DT) attributes of the 2nd GEN FLIR and SEP programs.	ation: This grams.	project funds	a 1-2 vehic	le limited us	er excursion	to verify op	erational tes	st (OT) and/	or developm	ental test
Acquisition Strategy: Not Applicable										
FY 1995 Accomplishments: Program not funded in FY 95	n FY 95									
FY 1996 Planned Program: Program not funded in FY 96	n FY 96									
FY 1997 Planned Program: • 1460 Testing Support Total 1460										
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996)		FY 1995		FY 1996	FY 997 0					
Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since					1460					and the second s
Current President's Budget Submit			0	0	1460					



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Project D2UT

Exhibit R-2 (PE 0203735A)

Change Summary Explanation: Funding: This project is a new start in FY 97.



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	TFICAT	HS NOI	EET (R	-2 Exhit	oit)		DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development			PE NU 020:	PE NUMBER AND TITLE 0203735A Com	пге ombat Ve	shicle Im	proveme	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	PROJECT D2UT	лест ЛТ
C. Other Program Funding Summary Abrams Upgrade Program (GA0750) Abrams Vehicle modification Program (GA0700)	FY 1995 280013 37162	FY 1996 565126 50093	FY 1997 464486 50217	FY 1998 572869 40509	EX 1999 673335 23200	FY 2000 651149 40539	EY 2001 653335 95219	900	To <u>Compl</u> Con't Con't	Total Cost Con't Con't
D. Schedule Profile 1 OT/DT	FY 1995 2 3	4	F)	FY 1996 2 3	4	FY 1997 2 3	7 E			
Project D2UT			Page 5 of 28 Pages 1309	8 Pages			Exhib	Exhibit R-2 (PE 0203735A)	35A)	

RDT&E BUDGET ITEM JUST		MILKS AND	S Z O Z		FICATION SHEET (R-2 Exhibit)	Dit)		DATE	March 1996	9
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TITLE	en vie Prendeswykostatura paramapayakista		er verteben der der state der state der state der		PROJECT
7 - Operational System Development			020	3735A C	Sombat V	ehicle In	nprovem	0203735A Combat Vehicle Improvement Programs		D280
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D280 Recovery Vehicle Improvement Program	6468	3000	3116	0	0	0	0		0	48335

the additional towing capability, and hydraulic assisted brakes were added. The boom has a 35 ton lift capacity, the main winch has a constant pull capability of 70 tons and the main battle tank. The HERCULES IRV is currently migrating from the Engineering, Manufacturing and Development Phase to Low Rate Initial Production (LRIP) with The vehicle has a .50 caliber machine gun mounted for self-protection. The M88A2 HERCULES IRV is capable of performing recovery, evacuation, and limited repair of recovery vehicle configured with an A-frame boom, two winches, and a spade. The M88A2 HERCULES IRV has a 1050 HP engine, an improved transmission to handle an additional 3 ton auxiliary which is used to deploy the main winch. The hull is armored for protection against small arms fire, artillery fragments, and anti-tank mines. A. Mission Description and Budget Item Justification: The M88A2 HERCULES Improved Recovery Vehicle (IRV) is an armored, full-tracked, diesel-powered a MS III decision scheduled for 4Q96.

duplication of costs and work efforts that would not be offset by the normal expected benefits of competition. An approved Justification and Approval for Other than Full and Open Competition, will be solicited prior to the issuance of any sole source contractual actions. Small and small-disadvantaged business will have opportunities to HERCULES, Improved Recovery Vehicle version within cost and time constraints. Award to another source would result in unacceptable delays in schedule and a Acquisition Strategy: Only UDLP possesses the M88A2 HERCULES system expertise necessary for completion of development and production of the M88A2 participate at the subcontract level. Monitoring of prime contractor subcontracting plans to ensure compliance will occur throughout the contract.

FY 1995 Accomplishments:

- Definitized Initial Production Release TDP and Packaging Modification
 - Awarded LRIP Provisioning Spares and Repairs TDP 3650
- Awarded LRIP Contract for Final Production Release 462
- Testing 219
- Program Management 149
 - 6468

FY 1996 Planned Program:

- Production Qualification Test (Performance)/Initial Operational Test & Evaluation 1827
 - Finalize LRIP Spares and Repairs TDP Mod 0001
 - - Program Management SBIR/STTR
- Revised economic assumptions not available for execution

Project D280

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Exhibit R-2 (PE 0203735A)





RDT&E BUDGET ITEM JUS		FICATI	ON SH	EET (R	TIFICATION SHEET (R-2 Exhibit)	oit)		DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development			PE NUN 0203	PE NUMBER AND TITLE 0203735A Com	TLE ombat V	ehicle Im	proveme	D TITLE Combat Vehicle Improvement Programs	PROJECT D280
FY 1997 Planned Program: • 3116 Refurbishment of Test Vehicles Total 3116									
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Value (FY 1995)		FY 1995 4653 4555	FY 1996 3085	<u> 1996</u> 3085	FY 1997 0				
Adjustments to FY 1995 Appropriated Value Appropriated Value (FY 1996) Adjustments to FY 96 Appropriated Value Adjustments to Budget Year (FY 1997) since FY 1006 Dracidant's Budget		1913	W	3031 -31	3116				
Current Budget Estimate Submission		6468	E	3000	3116				
Change Summary Explanation: Funding: FY 1995: +2500 reprogrammed from PE 0604619A, Project D088; -487 as billpayer for Congressional Rescission; -100 to PE 0604649A, Project DG26. FY 1996: Economic Adjustment. FY 1997: Increased to refurbish test vehicles.	PE 060461 ehicles.	9A, Project	t D088; -48	7 as billpaye	er for Congi	essional Re	scission; -100	to PE 0604649A, I	roject DG20
C. Other Program Funding Summary			F001 X	1000	0001	0000	1000 XII		•
GA0570 Improved Recovery Vehicle (M88 Mod) GE0171 Spares (Initial) M88A1E1	36788	55550 430	28641 299 299	FY 1998 28992 867	<u>FY 1999</u> 40693 1144	47708 1093	74879 1086	Compl Con't Con't	pi <u>Cost</u> l't Con't l't Con't
D. Schedule Profile	FY 1995	4	FY 1	FY 1996	4	FY 1997	۲ . 4		
Options - 15 vehs X* Options - 14 vehs X* level III Provisioning Spares)		**	n	-	1			
and Repairs Definitize Initial Production release TDP			*						
and Packaging Definitize LRIP Option - 15 Veh			*						
Project D280		P	Page 7 of 28 Pages	Pages			Exhibit	Exhibit R-2 (PE 0203735A)	A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE March 1996
System Development	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ment Programs D280
D. Schedule Profile 1 2 3 4 Definitize LRIP Option - 14 Veh PQT (Performance)/IOT&E Milestone III Decision First Unit Equipped (FUE) Refurbish Test Vehicles	FY 1996 1 2 3 4 1 2 3 X* X X X X X X X X X X X X X	4
* Milestone Completed		
Project D280	Page 8 of 28 Pages Ex	Exhibit R-2 (PE 0203735A)





RDT	RDT&E PROGRAM ELEMENT/	RAM ELI	EMENT/PR	PROJECT COST BREAKDOWN (R-3)	SOST BI	REAKDO	OWN (R-	3)	DATE March 1996	9661
BUDGET ACTIVITY 7 - Operational System Development	System De	velopmen			PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improvem	р πп∟Е Combat Vehicle Improvement Programs	PROJECT D280
A. Project Cost Breakdown	kdown			FY 1995		FY 1996	FY 1997			
Data (TDP)				1988						
Spares/Repairs TDP				3650		1000				
Final Production Release	ase			462						
System Test & Evaluation	tion			219		1827	•			
Refurbish Test Vehicles	es Sa			•		o o	3116			
Program Management Support	Support	A for particular		149		98 27				
SBINSTIK & REVISED ECULIANJIVA 101 EXECUTION Total	u Ecoli Auj IV/	o ioi execution	 1	6468		3000	3116			
B. Budget Acquisition History and Planning Information	n History and	Planning Info	ormation.							
Performing Organizations	tions									
Contractor or	Contract									
	Method/Type	Award or	Performing	Project	Total					
ng	or Funding	Obligation	Activity	Office	Prior to				Budget to	
Activity	Vehicle	<u>Date</u>	EAC	EAC	FY 1995	FY 1995	FY 1996	FY 1997	Complete	te <u>Program</u>
opmen	t Organizatior	SI								
ense	SS-CPFF	Sep 91	N/A		21027					21027
		•	,		6					Č
United Detense	SS-CPFF	Jun 94	N/A		3990					3990
ense	SS-CPFF	Oct 94	N/A		2346	1988				4334
United Defense	SS-CPFF	Sep 95	N/A			462				462
ense	SS-CPFF	Aug 95	N/A			3650	1000			4650
ense	SS-CPFF	Nov 96	N/A					3116		3116
Project D280				Pag	Page 9 of 28 Pages	ies		Exhil	Exhibit R-3 (PE 0203735A)	A)

RDT&E PROGRAM ELEMENT/PROJECT	8 1	REAKDO	COST BREAKDOWN (R-3)	3)	DATE March 1996	1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improvem	onne Combat Vehicle Improvement Programs	PROJECT D280
Contract Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	to Total
Support and Management Organizations PMO/TACOM	1358	149	86			1605
wallen, ivii Other Government Agencies	278		;			278
SBIR/STTR & Revised Econ Adj Revised Econ Adj Test and Evaluation Organizations			75			75
TECOM/CSTA-	5279	219	1827			7325
TACOM Warren MI	542					542
Other	931					931
Government Furnished Property: Not Applicable						
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	27363 1636 6752 35751	6100 149 219 6468	1000 173 1827 3000	3116		37579 1958 8798 48335
Project D280	Page 10 of 28 Pages	ages		Exhil	Exhibit R-3 (PE 0203735A)	5A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	JEET (R	-2 Exhil	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	ţ		PE NI 020	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	птге ombat V	ehicle In	proveme	ent Progi		PROJECT D330
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D330 Abrams Improvement	10441	38047	70046	32415	1933	0	0		0	701896

upon a core digital electronics architecture that interconnects the vehicle's components via power and data busses. The digital architecture and modular design enables rapid effective configuration control. The FY 1978-1985 block improvements resulted in the MIA1 Abrams Tank which incorporated the 120 mm gun system, a hybrid nuclear, A. Mission Description and Budget Item Justification: Abrams Main Battle Tank (M1A2) incorporates significant advances in crew protection, firepower and mobility. included Commander's Independent Thermal Viewer (CITV), Position Navigation Unit and the Inter-Vehicular Information System (IVIS). The MIA2 design is founded The Abrams Block Improvement Program (BIP) provides for timely initiation of evolutionary improvements anticipating threat changes and capitalizes on technological biological and chemical (NBC) overpressure system, upgraded armor and suspension/final-drive upgrades. The FY 1985-1993 block improvement (M1A2/Block II) opportunities. The BIP introduces time-phased product improvement to the production line in groups called "Blocks" to minimize production costs while providing system enhancements without major hardware changes.

engagement sighting systems. The TIS and CITV are based on 1970's technology in the areas of image processing electronics and thermal detector design. Recent advances survivability by extending the engagement envelope under all weather conditions and by increasing the situational awareness of the tank crew. The 2nd GEN FLIR will also in these areas have demonstrated the ability to build detectors containing many more individual detector elements and to integrate image processing electronics directly into FLIR) sensors and electronics improvements which support the Army's digitization effort. Currently Abrams M1A2 Tank employs a Thermal Imaging System (TIS) and The BIP supports two Army Horizontal Technology Initiatives by integrating into the Abrams Tank common Second Generation Forward Looking Infra-Red (2nd GEN Commander's Independent Thermal Viewer (CITV) to provide the Gunner/Commander with improved all-weather, day/night surveillance, target acquisition and target the detector chip. FLIR systems incorporating these advances are capable of imagery possessing significantly higher resolution, improving the crew's ability to detect, recognize and identify targets at longer ranges when compared to the current FLIR technology. The 2nd GEN FLIR will improve the tank's lethality, fightability and reduce fratricide due to mis-identification of targets.

improved processors, increased memory and software partitioning necessary for the M1A2 to operate in the Army's common operating environment (ACOE). The upgrade exportable to other Abrams platforms, meet Army requirements for joint interoperability with Combined Arms Command & Control Systems and maximize compatibility/ also provides for future growth without significant changes in vehicle architecture. Growth provisions are required to allow the insertion of technology forecast to mature The System Enhancement Package (SEP) was initiated to support the US Army's Digitization of the Battlefield effort. This effort upgrades the M1A2 electronics with between now and 2003. Software partitioning will allow the insertion of new hardware with minimal change to existing software. These changes are designed to be commonality with other Armored Systems Modernization (ASM) systems.

Project D330

Page 11 of 28 Pages

Exhibit R-2 (PE 0203735A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY 7 - Operational	зирдет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	PROJECT PROJECT Through the project through th
Acquisition Strategy M1A2 Abrams Tank and updates the core	Acquisition Strategy: The present SEP/2nd GEN FLIR acquisition strategy calls for a four and one-half year development effort, which began in 4Q94, to upgrade the M1A2 Abrams Tank electronics and fire control subsystems. The program integrates common 2nd GEN FLIR sensors and components (B-Kit) into Abrams thermal sigh and updates the core electronics to be compatible with the Army Common Operating Environment.	tion strategy calls for a four and one-half year development effort, which began in 4Q94, to upgrade the le program integrates common 2nd GEN FLIR sensors and components (B-Kit) into Abrams thermal sights Common Operating Environment.	sgan in 4Q94, to upgrade the Kit) into Abrams thermal sights
FY 1995 Accomplishments:	ments: Completed concept study (Phase I) for integration of 2nd GEN FLIR technology into Abrams tank Began EMD (Phase II) for 2nd GEN FLIR development and integration. PMO/Engineering Support/Other	3N FLIR technology into Abrams tank d integration.	
Note: Completed Sy	Note: Completed Systems Requirements Review (SRR) and Preliminary Design Review (PDR) for SEP (Phase I), partially funded by 23758/D374.	Review (PDR) for SEP (Phase I), partially funded by 2375	8/D374.
FY 1996 Planned Program:	ne SEP/2nd GEN FLIR Critical De ly. Perform Pentastar sub-contract ngineering Support/GFE to Contract Economic Assumption not availab STTR ign Review (CDR) for SEP (Phase)	sign Review, continue development and begin demonstration hardware fabris scope on GDLS and TI development contracts for TMDE (DSESTS) efforts. tor to support fabrication and component testing. le for execution II).	ication component testing and s.
FY 1997 Planned Program:	ogram: Continue development and demonstration hardware fabrication and assembly. Evaluate pre-SEP M1A2 compatibility with ACOE and conduct System Requirements Review and System Design Reviews (SRR/SDR). Begin testing of hardware/software on tank. PMO/Engineering Support/GFE to Government test.	ion and assembly. Evaluate pre-SEP M1A2 compatibility (SRR/SDR).	with ACOE and conduct

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Project D330

Exhibit R-2 (PE 0203735A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFICAT	HS NOI.	EET (R-	2 Exhib	it)		DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUN 0203	PE NUMBER AND TITLE 0203735A Com	րլե ombat Ve	hicle Im	proveme	OTITLE Combat Vehicle Improvement Programs	PROJECT D330	
B. <u>Project Change Summary</u> Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	FY 1995 11674 11429	E	38807	FY 1997 48702					
Adjustment to FT 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget	24.01 00 14.00 16.		38432 -385	21344					er e
Change Summary Explanation: Funding: FY 95 - Funds were reprogrammed for higher priority requirements within PEO. FY 96 - Adjusted for inflation rates. FY 97 - Funds increased to incorporate an under armor auxiliary power unit (UAAPU) and a thermal management system (TMS), as well as to assure compatibility with the ACOE. Schedule: Slipped 6 months with production cut-in now planned for 3Q FY 99. Technical: Requirement for increased power and a thermal management system (UAAPU/TMS) and the ongoing effort to fully comply with the ACOE, required additional funds and time.	gher priority req 1 under armor au COE. now planned for hermal managen	uirements wixiliary powers 200 FY 99.	thin PEO. rr unit (UAA UAAPU/TM	PU) and a th	ermal mana ngoing effo	gement syst	em (TMS), as well mply with the AC	as to assure OE,	
C. Other Program Funding Summary	05 EV 1006	FV 1007	FV 1008	FV 1999	FV 2000	FV 2001	<u>ق</u>	To To	Total Cost
Abrams Upgrade Program (GA0750) 280013 Abrams Vehicle Modification (GA0700) 37162 M1A2 Training Devices (GB1302) 16797 Training Device Mod (GA5208) 987 Initial Spares (GE0161) 13451		464486 50217 12602 3184 9290	572869 572869 40509 13413 6086 17776	673335 673335 23200 13935 2698 21069	651149 40539 8580 2817 20617	653335 95219 11316 5773 21094	30000	·	Con't Con't Con't Con't
Project D330		Page 13 of 28 Pages	8 Pages			Exhibit	Exhibit R-2 (PE 0203735A)	5A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATIO	N SHEET (R-2 Exhibit)	DATE March 1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	AND THE CONTROL	PROJECT D330
D. Schedule Profile FY 1995		Y 1996 FY 199		
Program Milestones PDR - 2nd GEN FLIR PDR - SEP CDR - 2nd GEN FLIR CDR - SEP Begin Technical Testing - SEP * Milestone Completed	6 * * * * * * * * * * * * * * * * * * *	2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 4 1 5	4	
Project D330	Pag	Page 14 of 28 Pages	Exhibit R-2 (PE 0203735A)	antoning the second second second second
		1318		gradus a promocratic activities and





RDT&E PR	RDT&E PROGRAM ELEMENT/	EMENT/PR	PROJECT (SOST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	n Developmer	nt		PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improvem	D TITLE Combat Vehicle Improvement Programs	PROJECT D330
A. Project Cost Breakdown			FY 1995	H	FY 1996	FY 1997			
System Enhancement Package (SEP)/2nd GEN FLIR	(SEP)/2nd GEN FL	IR.	5346		22982	55946			
Sight Development - 2nd GEN FLIR	FLIR		3630		9173	00/9			
Testing - SEP/2nd GEN FLIR					000	3400			
Gre - Ser/zild Gen FLIN Engineering Support - SEP/2nd GEN FLIR	d GEN FLIR		1465		2400 2536	3000			
Economic Adjustment & SBIR/STTR	STTR			•	956				
lotai			10441		38047	70046			
B. Budget Acquisition History and Planning Information	y and Planning In	formation							
Performing Organizations									
Contractor or Contract									
	ype Award or	Performing	Project	Total					
gui		Activity	Office	Prior to				Budget to	Total
Activity Vehicle	Date	$\overline{\text{EAC}}$	\overline{EAC}	FY 1995	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	zations								
GDLS - M1A2 SS-CPIF	Dec 85		472549	472549					472549
_			6	•					
GDLS - SEP/2nd SS-CPFF	Sep 94		109930	11834	5346	7.7987	55946	13822	109930
Sterling Hots, MI									
Texas Inst-GEN II C-CPAF	Jul 94		26703	4200	3630	9173	6700	3000	26703
FLIR Sight (A Kit)									
Note: FY 95 and FY 96 GDLS SEP contract efforts partially funded by 23758/D374,	SEP contract effort	's partially funded	by 23758/D37	74.					
Support and Management Organizations	ganizations								
Engr Spt/Other			30756	30756					30756
(MIAZ) Econ Adinet-&						950			750
SBIR/STTR						000			000
Engr Spr (SEP/FLIR)					1465	2536	3000	2226	9227
Project D330			Раге	Page 15 of 28 Pages	ses		Exhir	Exhibit R-3 (PF 0203735A)	_
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RDT&E	PROGR	MELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COSTB	ZEAKDC	WN (R-	3)	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	stem Dev	elopment		quyermatico successiva servido successiva	PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improven	STITLE Combat Vehicle Improvement Programs	PROJECT D330
Contractor or Cor Government Met Performing or F Activity.	ła –	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations Testing M1A2 Testing- SEP/2nd Gen FLIR	ganizations			29675	29675			3400	1130	29675
Government Furnished Property GFE - SEP/FLIR	Property						2400	1000	4000	7400
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation & GFE Total Project	oment nagement tion & GFE				488583 30756 29675 549014	8976 1465 10441	32155 3492 2400 38047	62646 3000 4400 70046	16822 2226 15300 34348	609182 40939 51775 701896
Project D330	The second secon			Pag	Page 16 of 28 Pages	ıges	to per to o moto de constitue de	Exh	Exhibit R-3 (PE 0203735A)	(F
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	FION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t		PE NI 020	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	пт <u>г</u> е ombat V	ehicle In	provem	ent Prog	_	РRОЈЕСТ D344
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D344 Fire Support Team Vehicle	13973	22559	20398	3818	0	0	0		0	60768

hull, and associated computer software and electronic interconnections. A new turret slip ring and mounting/communication provisions for four SINCGARS radios are also A. Mission Description and Budget Item Justification: This project supports material development and the conversion of a number of Bradley Fighting Vehicles to the Bradley Fire Support Team (BFIST) vehicle configuration. Fire Support Teams (FIST) equipped with the M981, the current fire support vehicle, were unable to maintain control display, ring laser/inertial gyroscope, a handheld terminal unit in the turret, a lightweight computer unit and a communication fire mission planning station in the Designator) into candidate Bradley A2-ODS and A3 vehicles. New or improved components will include bioccular display, cameras, video electronics, targeting station operational deficiencies and shortcomings. This project integrates selected existing M981 fire support equipment (FSE) equipment (i.e. the AN/TAS-4B Night Locator the operational tempo of Bradley/Abrams equipped maneuver forces during Operation Desert Storm (ODS). Additionally, the M981 displayed a number of other provided. This system involves engineering, manufacturing development, test, and evaluation.

cost was \$29.8M. The contract's scope of work requires design and fabrication of four BFIST prototypes for pre-production and user testing. Completion is scheduled for September 1997. A low rate initial production (LRIP) contract for 12 BFIST vehicles is planned for award to UDLP by October 1998. The Full Rate Production contract is contract was solicited for the Bradley A2-ODS through full and open competition and was awarded to United Defense Limited Partnership (UDLP) in June 1995. Target Acquisition Strategy: The BFIST program integrates FSE into candidate Bradley A2-ODS and A3 vehicles. An Engineering and Manufacturing Development (EMD) planned for award to UDLP in FY 99 for a total of 16 vehicles, with options for 33 vehicles in FY 00, 47 in FY 01, and 59 in FY 02.

Development and production of the Bradley A3 BFIST is expected through award of a sole source EMD contract to UDLP by first quarter FY 97 with completion in FY 99. Follow-on award of an LRIP contract is planned in FY 02 for production of 10 A3 BFIST. A full Rate Production contract is planned in FY 03 for 52 vehicles with options in FY 04 for 48 vehicles, FY 05 for 53 vehicles, FY 06 for 48 vehicles, and FY 07 for 28 vehicles.

FY 1995 Accomplishments:

- 11478 Phase I Design Engineering
- 21 Phase I Prototype Manufacturing
 - 2474 In-House Tasks
- otal 1397

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Project D344

Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R.	2 Exhibit)	DATE March	1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203735A Com	отть Combat Vehicle Improvement Programs	vement Programs	РРОЈЕСТ D344
FY 1996 Planned Program: 17623 Phase I Design Engineering 1310 Phase I Prototype Manufacturing 3060 In-House Tasks 503 SBIR/STTR 8 83 Revised Economic Assumption Not Available For Execution Total 22559	uo			
 FY 1997 Planned Program: 12422 Phase I Design Engineering 121 Phase I Prototype Manufacturing 3000 Phase II Design Engineering 4855 In-House Tasks Total 20398 				
<u>a</u>	FY 1996 23192	<u>FY 1997</u> 20954		
Adjustments to F r 1993 Appropriated value Adjustments to Budget Year (FY 1997) since FV 1006 President's Budget	-613	-556		
Current Budget Estimate Submission	22559	20398		
Change Summary Explanation: Funding: 3999 decrease in FY 95: 1100 reprogrammed to PE 64640, Project D627, 2806 reprogrammed PE 23735, Project D371, and 93 reprogrammed PE 64640, Project DDG27 Project DDG27 613 decrease in FY 96 due to economic adjustments 556 decrease in FY 97 due to economic adjustments	oject D627, 2806 rep	rogrammed PE 23735, Projec	t D371, and 93 reprogramı	med PE 64640,
C. Other Program Funding Summary	EV 1007 EV 1009	PV 1000 FV 2000 EV	2001	`
0221		31763		Con't Con't
Project D344	Page 18 of 28 Pages		Exhibit R-2 (PE 0203735A)	5A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	PROJECT ent Programs D344
D. Schedule Profile 1 2 3 4 1	FY 1996 FY 1997 2 3 4 1 2 3 4	
	× × ×	
* Milestone Completed		
Project D344	Page 19 of 28 Pages Exhib	Exhibit R-2 (PE 0203735A)
	1323	

RDT&E PROGRAM ELEMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BE	RAKDO	WN (R-	8	DATE March 1996	1996
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A COM	AND TITLE A Comba	at Vehicle	Improven	отпте Combat Vehicle Improvement Programs	PROJECT D344
A. Project Cost Breakdown Phase I Design Engineering Phase I Prototype Manufacturing Phase II Design Engineering Phase II Prototyne Manufacturing	<u>FY 1995</u> 11478 21	<u>FY 1996</u> 17623 1310	<u>7 1996</u> 17623 1310	<u>FY 1997</u> 12422 121 3000			
In-House Tasks SBIR/STTR Revised Economic Assumption Not Available For Execution Total	2474	5. 2.	3060 503 83 22559	4855			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	to Total
Product Development Organizations UDLP C/CPIF Jun 95 UDLP SS/CPIF Nov 96	48484		11499	19594	12543 3000	36	3632 47268 3000
Support and Management Organizations: PM/Govt Test and Evaluation Organizations: ATC/TECOM			2474	3060	3228		186 8948
Government Furnished Property: Not Applicable							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation		0 0	11499 2474	19594 2985	15543 3228 1627	36	3632 50268 186 8873 1627
Total Project		0	13973	22559	20398	38	3818 60768
Project D344	Page	Page 20 of 28 Pages			Exh	Exhibit R-3 (PE 0203735A)	5A)





RDT&E BUDGET ITEM JUS	EM JUS		ION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	ţ		PE NI 020	PE NUMBER AND TITLE 0203735A Com	E NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle In	provemo	ent Prog		Р ROJECT D371
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D371 Bradley Base Sustainment Program	76323	114638	87135	61952	32115	0	0		0	433386

electronics, digital command and control (compatible with the M1A2 Tank), and Commander/Gunner 2nd GEN FLIR displays for enhanced target acquisition. Other major communications, autotracking, diagnostics, embedded training and fire control, as well as full digital integration of all Operation Desert Storm (ODS) Improvements. This A3 improvements include a 1553 databus based core electronics architecture, digital information displays, software packages for command and control, navigation, A. Mission Description and Budget Item Justification: This project upgrades 1602 Bradley M2A2/M3A2s to the A3 configuration giving the system improved program began in FY 94 and was funded under Project D332. The project involves engineering, manufacturing development, test, and evaluation.

competitively. Three low rate initial production (LRIP) awards are scheduled for July 1997 for 29 vehicles, May 1998 for 41 vehicles, and December 1998 for 74 vehicles. Acquisition Strategy: A letter contract, not to exceed \$280M, was awarded for this effort in May 1994. The contract was definitized in August 1995 with award of a Cost comprising approximately 33% of the contract cost. Of these, five are firm fixed price (FFP) contracts and five are CPIF. The majority of the contracts were awarded Plus Incentive Fee (CPIF) contract. The CPIF contract has a 65 month period of performance including three months for close-out. There are ten subcontractors, A production award is scheduled for January 2000 for 121 vehicles.

FY 1995 Accomplishments:

- Prototype Manufacturing 57695 Design Engineering In-House Tasks 10841 7787

76323

Total

FY 1996 Planned Program:

- Design Engineering 82293
- Prototype Manufacturing 20620
 - In-House Tasks 8846
- SBIR/STTR 2557
- Revised Economic Assumption Not Available For Execution

Project D371

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICAT	HS NO		2 Exhib	if)	DATE	March	1996
BUDGET ACTIVITY 7 - Operational System Development	SALICA I CARAMENTALIA I I A CONTROLO CONTROLO CONTROLO CONTROLO CONTROLO CONTROLO CONTROLO CONTROLO CONTROLO C	PE NUI 0203	PE NUMBER AND TITLE 0203735A Com	ITLE ombat Ve	hicle Im	ΣΤΙΤΙΕ Combat Vehicle Improvement Programs	rograms	PROJECT D371
FY 1997 Planned Program:								
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Value (FY 1995) Adjustments to FY 1995 Appropriated Value	FY 1995 75094 73517 2806		FY 1996 117858	FY 1997 91643				
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since			115797 -1159	-4508				
FY 1996 President's Budget Current Budget Estimate Submission	76323		114638	87135				
Change Summary Explanation: Funding: 2806 increase in FY 95; reprogrammed from PE 23735, Project D344 1159 decrease in FY 96 due to economic adjustments 2079 decrease in FY 97; realigned to PE 23735, Project D2TT; 2429 decrease due to economic adjustment	om PE 23735, Pr. djustments 3735, Project D2	oject D344 .TT; 2429 de	screase due t	o economic	adjustment			
ഥ	뙤	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To <u>Compl</u>	
G80716 Bradley Base Sustainment (M2A2) 136117 G80717 Bradley Base Sustainment (M2A3) 1492	17 133868 92	7542 126886	157464	349050	159669	830270	Con't	596273 n't Con't 11492
- &	8	9306 83649	475 62057	1594 59880	70098	70887	Con't	
GZ2000 Bradley FVS Training Devices (Mod) G20900 Bradley FVS Training Devices	3969 1813	900 573	1424	6096	10575	0986	Con't	8682 n't Con't
		Dan 22 pt.	0 O D			ָה מַ װִּאָלָאָרָה מייאָיִאָּי	10000 EU	<
FT0 ett D3/1	والمالية والمراجعة المتمالية ومراجعة والمتمالية والمتمالية والمتمالية والمتمالية والمتمالية والمتمالية والمتما	ruge 22 0/ 20 ruges	20 rages			Z-XIIDII K-Z	EXIIIDIL K-2 (PE 0203733A)	/A/)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIFICATI	ON SHEET (R-2	Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	ţ	PE NUMBER AND TITLE 0203735A Com	D TITLE Combat Vehicle Improvement Programs	PROJECT PROGRAMS D371
D. Schedule Profile	FY 1995	FY 1996	FY 1997	4
Software Design Review Preliminary Design Review Critical Design Review Software Critical Design Review PPQT-Government Limited User Test #1 LRIP IPR LRIP Award Limited User Test #2	· *	ı.	× ×	· ××
* Milestone Completed				
Project D371	P_i	Page 23 of 28 Pages	Ω Q	Exhibit R-2 (PE 0203735A)
		1327		

RUT&E PROGRAM ELEMENT/PROJECT				SOST BI	ZEAKDO	COST BREAKDOWN (R-3)	3)	DATE March 1996	1996
BUDGET ACTIVITY 7 - Operational System Development	olopmení		main day and the first of the second	PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improvem	ס דותנב Combat Vehicle Improvement Programs	PROJECT D371
			e redo y vez y later en la redonne de la companya d	Edward State of The State of Th	Supplier the control production of the control of t	Listanti praktiga protesta et i strangen et est est distanti			A BONG PAR PARAMETER AND
A. Project Cost Breakdown Design Engineering			FY 1995 57695		<u>FY 1996</u> 82293	FY 1997 73642			
Prototype Manufacture In-House Tasks			10841 7787	73	20620 8846	4688 8805			
SBIR/STTR Revised Economic Assumption Not For Execution Total	· Execution		76323	11	2557 322 114638	87135			
B. Budget Acquisition History and Planning Information	anning Info	rmation							
Performing Organizations									
Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to				Budget to	t to Total
<u>Vehicle</u> velonment Organizations	<u>Date</u>	EAC	EAC	FY 1995	FY 1995	FY 1996	FY 1997	Complete	ete Program
United Defense CPIF A	Aug 95	277834	279334	31628	48491	83115	56100	09	60000 279334
SS/CPIF	Feb 94	63555	62319	20408	15349	16262	9200		1100 62319
Other Contracts	_			3522	4696	2689	10614	11	11464 37193
Support and Management Organizations: PMO	ions:			861	1069	1978	1550	2	2818 8276
PM CCAWS Other				3721 1083	4700	4722	5500 1755	→ →	2
Test and Evaluation Organizations: TECOM)	2416	15	
Government Furnished Property: Not Applicable	ot Applicabl	Ð							
Project D371			Page	Page 24 of 28 Pages	ges		Exhil	Exhibit R-3 (PE 0203735A)	5A)
				0001					





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COSTB	REAKD	OWN (R-	3)	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER ANI 0203735A	PE NUMBER AND TITLE 0203735A Comb	at Vehicle	Improven	D TITLE Combat Vehicle Improvement Programs	PROJECT D371
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project**	Total* Prior to FY 1995 55558 5665	FY 1995 68536 7787 76323	FY 1996 106274 8364 114638	FY 1997 75914 8805 2416 87135	Budget to <u>Complete</u> 72564 5724 15779	D Total E Program 378846 36345 18195 7433386
* \$61.223M obligated in FY 94; dollars prior to FY 95 were in PE 23735, Project 332 ** Total project represents FY 94 to completion	ct 332					y Martin (Edward)
						elevine of the second

Page 25 of 28 Pages

Project D371

Exhibit R-3 (PE 0203735A)

RDT&E BUDGET ITEM JUST			SVOL		IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	ဖွ
BUDGET ACTIVITY 7 - Operational System Development	· The state of the	international description of the control of the con	PE NI 020	PE NUMBER AND TITLE 0203735A Com	тпсе Sombat V	ehicle In	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ent Prog	rams	PROJECT D392
COST (In Thousands) Actual Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D392 Armored Gun System Improvements	0	16269	0	0	0	0	0			16269

significantly increasing lethality and survivability of the AGS. The use of a common 2nd GEN FLIR will increase force effectiveness by allowing all host platforms to "see A. Mission Description and Budget Item Justification: This project supports the engineering efforts associated with integration of the 2nd GEN FLIR into the Armored Gun System (AGS). The 2nd GEN FLIR will increase target detection, recognition and identification at night or through smoke, fog and other battlefield obscurants the same battlefield". Additional benefits will be realized through procurement economies of scale, common training and reduced logistics burden.

Acquisition Strategy: The AGS program is being terminated. The funding in FY 96 will pay for work accomplished prior to stop of work and efforts associated with program termination.

FY 1995 Accomplishments: Program not funded in FY 1995

FY 1996 Planned Program:

- Engineering/Manufacturing Development 0099
 - AGS Program Termination 9260
 - SBIR/STTR 363
- Revised Economic Assumption not available for execution

Total

FY 1997 Planned Program: Program not funded in FY 1997



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Project D392

Exhibit R-2 (PE 0203735A)



RDT&E BUDGET ITEM JUS	EM JUSTIFIC	TIFICATION SHEET (R-2 Exhibit)	HEET (R-	2 Exhib	it)		DATE March 1996	9661
BUDGET ACTIVITY 7 - Operational System Development	ıt	PE NU 020	PE NUMBER AND TITLE 0203735A Com	π∟E ombat Ve	hicle Im	proveme	ס זודוב Combat Vehicle Improvement Programs	PROJECT D392
Change Summary Explanation:Funding: FY 1996 - Revised economic assumptions.FY 1997 - Program adjusted to reflect changed acquisition strategy.Schedule: All efforts have been put on hold pending program termination.	sumptions. reflect changed acqui	sition strategy. rmination.						
C. Other Program Funding Summary	FY 1995 FY 1996	996 FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	To Total
64710/DL69 HTI 2nd GEN FLIR ED 23735/D330 Abrams 2nd GEN FLIR GA0750 Abrams 2nd GEN FLIR		•	3317 3600 106721	106140	94069	88580		
GA0700 Abrams (Mods) 2nd GEN FLIR G80717 BFVS 2nd GEN FLIR B-Kit 23735/371 Bradley 2nd GEN FLIR	36303	25776	27149	50240	28423 109850	68032 120359		
D. Schedule Profile: All efforts have been put on hold pending program termination	n hold pending progra	m termination						
Project D392		Page 27 of 28 Pages	28 Pages			Exhib	Exhibit R-2 (PE 0203735A)	5A)
		1331						

RDT&E PROGRAM ELEMENT/P	ROJECT COST BREAKDOWN (R-3)	COST BF	RAKD	WN (R.	<u>©</u>	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	Improvem	ЭТІТІЕ Combat Vehicle Improvement Programs	PROJECT D392
A. <u>Project Cost Breakdown</u> Prototype Design & Fabrication AGS Program Termination SBIR/STTR Revised Economic Assumptions not available for execution Total	FY 1995	<u>a</u>	7. 1996 6600 9260 363 46 16269	FY 1997 0 0			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to	to Total
Product Development Organizations Night Vision Labs MIPR MAR 96 6600 United Defense CPIF TBD TBD Support and Management Organizations SBIR/STTR - Revised Economic Assumptions Test and Evaluation Organizations Not Applicable	6600 TBD			6600 9260 477			
Government Furnished Property: Not Applicable							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				15860 409 16269			15860 409
Project D392	Pag	Page 28 of 28 Pages	6.5		Exhib	Exhibit R-3 (PE 0203735A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SE	HEET (R	-2 Exhi	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t.		PE NL 020	PE NUMBER AND TITLE 0203740A Mane	птге Ianeuver	PE NUMBER AND TITLE 0203740A Maneuver Control System	System			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	36657	49528	29082	22938	17261	15337	0		Continuing	Continuing
DC49 Standard Theater Army Command and Control System (STACCS)	19652	13805	0	0	0	0	0		Continuing	Continuing
D2HT MCS Operational Test	338	4841	3895	0	0	0	0		0	9074
D484 Maneuver Control System	16667	30882	25187	22938	17261	15337	0		26665	423111

System (AWIS) and the United States Commander-in-Chief Europe (USCINCEUR) Command and Control System (UCCS), the AGCCS will provide a layered architecture Mission Description and Budget Item Justification: This program element funds the evolutionary software development integration and testing of command and control performed manually. It provides secure, automated assistance to the Operations Staff (G3/S3) and other key staff to meet the information needs of commanders for quicker inventory or is currently under development and are therefore appropriately included in Budget Activity 7. Beginning in FY 1997 the Project DC49, STACCS will become decisions and application of battlefield resources. MCS provides standardized message sets, acquires commander's critical information requirements, and displays status screens and battlefield graphics. These projects involve the development, enhancement, and integration of software functionality that currently exists within the Army's foundation applications and additional software functionality developed under the Army World Wide Military Command and Control System (WWMCCS) Information supports the implementation of the Joint Global Command and Control System (GCCS). This support is being accomplished through a selection of the Army's "best of and functional best of breed software applications to develop a totally integrated component of the GCCS. Project D2HT, MCS Operational Test, will support planned systems. Project DC49, STACCS is the foundation for the Army Global Command and Control System (AGCCS), which is the Army component system that directly breed" command and control functionality for inclusion in the Joint GCCS. The AGCCS-developed software systems will dramatically improve the Army's ability to Initial Operational Test & Evaluation (IOT&E) of MCS. Project D484, Maneuver Control System (MCS), automates command and control (C2) functions previously analyze courses of action; develop and manage Army Forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. Using STACCS the AGCCS Project DC86 and has been restructured to PE 0303150A, also in Budget Activity 7.

Page 1 of 14 Pages

Exhibit R-2 (PE 0203740A)

RDT&E BUDGET ITEM JUST	SOL MA	TIFICAT	TONS		IIFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	<i>2</i> 0
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TITLE				PF	PROJECT
7 - Operational System Development	4		020	3740A N	0203740A Maneuver Control System	Control	System			DC49
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC49 Standard Theater Army Command and Control System (STACCS)	19652	13805	0	0	0	0	0		Continuing Continuing	Continuing
	And the second of the second o	TOWNS THE SAME PROPERTY OF THE SAME SAME SAME SAME SAME SAME SAME SAM	c raying and Guesti rout Birgaristivan I file	engalyje gajenopy campionity of Statemand Associated by 2500		ALTERNATION OF THE TAXABLE AND ALTERNATION OF THE PROPERTY OF	STREET,			The second secon

selection of the Army's best of breed command and control functionality. The AGCCS-developed software systems will dramatically improve the Army's ability to analyze Control System (UCCS), the AGCCS will provide a layered architecture and functional best-of-breed software applications to develop a totally integrated component of the A. Mission Description and Justification: Project DC49 - STACCS: This project is the Army component system that directly supports the implementation of the Joint courses of action; develop and manage Army Forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. The Army has identified the foundation applications and additional software functionality developed under the Army WWMCCS Information System (AWIS) and the USCINCEUR Command and Standard Theater Army Command and Control System (STACCS) as the foundation for the Army Global Command and Control System (AGCCS). Using STACCS Global Command and Control System (GCCS). This support is being accomplished through the Army's Global Command and Control System (AGCCS) which is a Global Command and Control System.

include conversion of existing products to GCCS and development of the Common Operating Environment (COE). Beginning with CP #3, all odd numbered CPs represent development of prime mission functionality. All even numbered CPs will be for fixes or upgrades to odd numbered CPs, if required. After delivery and testing of each new Acquisition Strategy: The AGCCS software integration and development effort is a 5 year RDTE incrementally funded completion effort. A hybrid (Cost-Plus-Award development, software maintenance and relocation/de-installation of the test facility. The development strategy includes 10 Capability Packages (CPs). CPs #1 and #2 Fee and Firm-Fixed-Price) contract was awarded to Martin Marietta Management and Data Systems (MM/MDS) in December 1994. The contract consists of software functionality (CPs 3,5,7,9) it will be determined if system upgrades (CPs 4,6,8,10) are needed.

Hardware/Software (CHS II) contract and will include equipment and basic Commercial off the Shelf (COTS) software packages. The COTS hardware and software will provide Reduced Instruction Set Computer (RISC) based machines with expanded processing, storage and communications capability as well as office-automation and A common hardware platform will be used within the Army to implement AGCCS/GCCS. This will include products from the Army's Common management software.

FY 1995 Accomplishments:

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2064

¹²⁷⁷³ Continued Prime Mission Software Development - Capability Package #3

⁴¹²⁷ Conducted Systems Test and Evaluation - Capability Package #1

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Project DC49	

Exhibit R-2 (PE 0203740A)

⁶⁸⁸ Performed Data Engineering



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATIO	N SHE	ET (R-	2 Exhib	it)		DATE March 1996	1996
BUDGET ACTIVITY 7 - Operational System Development		PE NUMI 02037	PE NUMBER AND TITLE 0203740A Mane	DE NUMBER AND TITLE OE CONTROL System	Control (System		PROJECT DC49
FY 1996 Planned Program: 1835 Perform Systems Engineering 1749 Continue Prime Mission Software Development - Capability package #5 12 Perform Data Engineering 3262 Conduct Systems Test and Evaluation - Capability Packages #2 and #3 308 SBIR/STTR 308 Revised Economic Assumptions - Not available for execution Total 13805	nt - Capabilit ility Package	ty package	#2 3					
FY 1997 Planned Program: See PE 0303150A, Project DC86								
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	FY 1995 20073 19652	FY 1996 14271		FY 1997 8143				
Adjustments to (FT 1995) Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY97) since		139	13944 -139	-8143				
FY 1996 President's Budget Current President's Budget Submit	19652	138	13805	0				
Change Summary Explanation: Funding: FY 96 - (-139) the portion of the program that has been proposed for rescission. FY97 - (-8143) restructured to PE 0303150A, Project DC86	is been propo oject DC86	sed for res	cission.					
C. Other Program Funding Summary Procurement OPA-2 BA8250 Std Theater Army Cmd & Contr System 13008	FY 1996 EY	FY 1997 20462	FY 1998 17788	FY 1999 25193	FY 2000 14078	FY 2001 9379	To Compl CONT	To Total Cost NT CONT
Project DC49	Pa	Page 3 of 14 Pages	Pages			Exhibi	Exhibit R-2 (PE 0203740A)	JA)

RDT&E BUDGET ITEN	M JUSTIFICATIO	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203740A Maneuver Control System	A TANKA MANANA M	PROJECT DC49
D. Schedule Profile 1 OSD MAISRC In Process Review Award AGCCS Contract AGCCS Capability Package 1 delivered GCCS Block 1 Completed AGCCS Capability Package 2 delivered AGCCS Capability Package 3 delivered AGCCS Capability Package 4 delivered AGCCS Capability Package 5 delivered	FY 1995 2 3 4 1 X* X*	FY 1996 2 3 4 1 X X	FY 1997 2 3 4 X X	
*Milestone Complete				
Project DC49	Pa	Page 4 of 14 Pages	Exhibit R-2 (PE 0203740A)	
		1336		



RDT	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT		SOST BI	REAKDO	COST BREAKDOWN (R-3)		DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development	System De	evelopmen	ţ		PE NUMBER AND TITLE 0203740A Mane	AND TITLE	iver Conti	אסאיזיור כ Maneuver Control System		PROJECT DC49	ст 6
A. Project Cost Breakdown Systems Engineering Prime Mission - Software Development Data Engineering System Test and Evaluation SBIR/STTR Revised Economic Assumptions - Not available for execution Total	akdown vare Developm uation sumptions - N	ient ot available fot	execution	FY 1995 2064 12773 688 4127	FY	FY 1996 1835 7749 612 3262 308 39 13805	FY 1997				
B. Budget Acquisition History and Planning Information Performing Organizations	on History and ations	d Planning Inf	ormation								
Contractor or Government Performing Activity	Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete		Total <u>Program</u>
Product Development Organizations TRW-W C/CPFF J TRW-E C/CPAF J LMC C/CPAF/FFP J	nt Organizatio C/CPFF C/CPAF C/CPAF	ons JUL 87 MAR 87 DEC 94	101604 N/A TBD	101604 N/A TBD	99687 1785 0	2552 676 14145	11674		00	CONT	102239 2461 CONT
Support and Management Organizations SBIR/STTR Rev Econ Assmp	ement Organi	zations					308		S S	CONT	CONT
Test and Evaluation Organizations MITRE C/FFP	Organization C/FFP	OCT 92	1075	4272		1529	800		00	CONT	CONT
										·	
Project DC49				Pagi	Page 5 of 14 Pages	jes		Exhibit	Exhibit R-3 (PE 0203740A)	10A)	

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	EAKDO	W R	The second secon	DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Man	ND TITLE	ver Contr	TITLE Maneuver Control System	dissipation and the production of the standard	PR(PROJECT DC49
Government Furnished Property: Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC Product Development Organizations LMC C/CPAF/FFP DEC 94 Support and Management Organizations: None Test and Evaluation Organizations: None	Total Prior to FY 1995 0	FY 1995 750	<u>FY 1996</u> 984	FY 1997	Buc	Budget to Complete CONT	Total Program CONT
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	101472	18123 1529 19652	12658 347 800 13805			CONT	CONT
Project DC49 Pc	Page 6 of 14 Pages	Si		Exhib	Exhibit R-3 (PE 0203740A)	3740A)	
		establishments and the country of the manufacture of the				The Addition of Theory of the state of the Common common	





RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	FIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE N	March 1996	6
BUDGET ACTIVITY 7 - Operational System Development	f		PE NI 020	PE NUMBER AND TITLE 0203740A Maneuver Control System	птге ¶aneuver	. Control	System		.	PROJECT D2HT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D2HT MCS Operational Test	338	4841	3895	0	0	0	0		0	9074

A. Mission Description and Justification: Project D2HT - MCS Operational Test: The project finances the direct costs of planning and conducting operational testing and evaluation of the Maneuver Control System (MCS) by the Operational Test and Evaluation Command (OPTEC). MCS is an Acquisition Category (ACAT) 1D system conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an with Operational Testing and Evaluation to be conducted in FY 97 via an Initial Operational Test and Evaluation (IOT&E). Operational testing is conducted under independent test and evaluation of effectiveness and suitability of the system.

Acquisition Strategy: Not Applicable

FY 1995 Accomplishments:

Analyzed data and prepared report on the results of ATCCS III Integrated Interoperability Demo

Total

FY 1996 Planned Program:

- MCS V12 IOT&E preparation
- MCS V12 instrumentation 1800
- Revised economic assumption not available for execution 13
 - SBIR/STTR 101

4841

FY 1997 Planned Program:

- Conduct MCS V12 IOT&E
- Evaluation of MCS V12 1895
- IOTE Unit (Test Players) Support 1200 3895

1339

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Project D2HT

Exhibit R-2 (PE 0203740A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	S S H H H S C		DATE March 1996
вироет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Mane	D TITLE Maneuver Control System	PROJECT D2HT
B. Project Change SummaryFY 1995Previous President's Budget (FY 96)90Appropriated Amount (FY 95)88Adjustment to FY 95+250Appropriated amount (FY 96)Adjustment to FY 96Adjustments to Budget Year (FY97) sinceFY 96 President's Budget	FY 1996 4975 4888 -47	FY 1997 0 +3895	
Current President's Budget Submit Change Summary Explanation: Funding: FY 95 (+250) and FY97 (+3895) funds increased for operational test and evaluation support to MCS FY 96 - (-47) the portion of the program that has been proposed for rescission.	4841 tional test and evali osed for rescission	3895 tation support to MCS.	
C. Other Program Funding Summary: Not Applicable			
D. Schedule Profile 1 2 3 4 MCS V12 IOT&E Preparation MCS V12 IOT&E *Milestone completed	FY 1996 X* X*	FY 1997 X X	
Project D2HT	Page 8 of 14 Pages 1340	Exhib	Exhibit R-2 (PE 0203740A)





RDT&E PROGRAM ELEMENT/PROJECT		COST BREAK	BREAKDOWN (R-3)		DATE March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	<u>. </u>	PE NUMBER AND TITLE 0203740A Maneuver Control System	LE neuver Cont	rol System		PROJECT D2HT
 A. Project Cost Breakdown Operational Test and Evaluation Total 	FY 1995 338 338	FY 1996 4841 4841	FY 1997 3895 3895			
B. Budget Acquisition History and Planning Information						
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Product Development Organizations: None Support and Management Organizations: None	Project Office <u>EAC</u> F	Total Prior to FY 1995 FY 1995	9 <u>5</u> FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations MISC Allot TEXCOM Allot OEC Allot III Corps MIPR		́ 0 0 0	338 0 0 4666 0 175 0 0	0 1895 800 1200	0 0	338 6561 975 1200
Government Furnished Property: None						
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		<i>ω ω</i>	338 4841 338 4841	3895 3895		9074
Project D2HT	Page	Page 9 of 14 Pages		Exhibi	Exhibit R-3 (PE 0203740A)	

RDT&E BUDGET ITEM JUS	EN 10S	2		TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	oit)		DATE M	March 1996	တ
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	ITLE				Д	PROJECT
7 - Operational System Development	مانية الإستان		020	3740A N	naneuver.	0203740A Maneuver Control System	System			D484
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D484 Maneuver Control System 16667	16667	30882	25187	22938	17261	15337	0		26665	423111

A. Mission Description and Justification: Project D484 - Maneuver Control System (MCS): The project satisfies an urgent need for efficient command and control of staffs, at corps through battalion, accurate, up-to-date information for quicker decisions and effective utilization of firepower and maneuver resources. The MCS data base tactical operations on the battlefield. MCS supports the operational concepts of initiative, agility, depth, synchronization and versatility. MCS provides commanders and provides decision support information and functional tools in both text and map graphics form. The system also automates the preparation and distribution of operational orders and reports to facilitate the initiation and execution of the commander's decision. Reports received through MCS automatically update the data base ensuring that current tactical information is available whenever and wherever it is needed.

Acquisition Strategy: Since the initial MCS was introduced in Europe in 1981, this program has been and will continue to be, evolutionary software development, broken functionality from V12.1. Therefore technical risk associated with each version is minimized. The use of a non-developmental item (NDI) tactical computer processor out into Blocks. The MCS capability continues to expand in pre-planned, time-phased steps toward the objective system. The final block of MCS software, Block IV, hardware/software (CHS) began in FY 1989 with the initiation of the porting of software as well as the initiation of the integration of CHS into both the Standardized consists of development of Versions 12.1, 12.2 and Version 12.3, which will become the objective system. Versions 12.2 and 12.3 add applications and stand-alone enables the MCS to capitalize on state of the art ruggedized, commercial equipment and reduce life cycle costs. Commencement of the transition to common Integrated Command Post System (SICPS) and the existing Command and Control Unit vehicle.

FY 1995 Accomplishments:

- 15825 Continued MCS V12 development/integration/prototyping.
- 200 Release Request For Proposals (RFP) for Block IV software development.
- Integrated Brigade and Below Command and Control (B2C2) and Terrain Evaluation Module (TEM) applications into MCS V12. 642

otal 16667

FY 1996 Planned Program:

- Begin subsystem engineering, integration and test for the Maneuver functional areas.
- 1531 Conduct Technical Test (TT)/Customer Test (CT)
- 21336 Continue MCS V12 development and integration effort.
 - 2248 Horizontal Battlefield Digitization
- 500 Initial preparation for IOT&E
- 300 Block IV source selection activities

Project D484



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Exhibit R-2 (PE 0203740A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Mane	PE NUMBER AND TITLE 0203740A Maneuver Control System	PROJECT D484
 FY 1996 Planned Program: (continued) 1000 Award Block IV software development contract 2000 Common ATCCS support 89 Revised economic assumption - not available for execution 678 SBIR/STTR Total 30882 	_		
 FY 1997 Planned Program: 2500 Continue subsystem engineering, integration and test for the Maneuver functional areas. 19958 Continue MCS V12 development and integration efforts 392 Support for IOT&E activities 1937 Horizontal Battlefield Digitization 400 Prepare for Army Systems Acquisition Review Council (ASARC)/Defense Acquisition Board (DAB) Milestone III review and decision Total 25187 	ne Maneuver functi SARC)/Defense A	onal areas. cquisition Board (DAB) Milestone III	eview and decision
B. Project Change Summary Previous President's Budget (FY 96) 16995 Appropriated Amount (FY 95) 16667	FY 1996 19081	<u>FY 1997</u> 25848	
Adjustment to F1 93 Appropriated Amount (FY 96) Adjustment to FY 96 Adjustments to Budget Year (FY97) since	31196	-661	
FY 96 President's Budget Submit 16667	30882	25187	
Change Summary Explanation: Funding: FY 96: funds increased to develop significant additional functionality in the MCS V12.01 software package which will serve as the software baseline for the MCS IOT&E and Task Force XXI experiment. FY 96: (-314) the portion of the program that has been proposed for rescission FY97: (-661) reduction due to revised inflation rates Schedule: No change. Technical: Phoenix functionality being integrated into MCS software.	t additional functionality in the MC the MCS IOT&E and Task Force X has been proposed for rescission in rates MCS software.	S V12.01 software package XI experiment.	
Project D484	Page 11 of 14 Pages	Exhib	Exhibit R-2 (PE 0203740A)
	1343		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N USTEC	A NOLA	E E E	2 Exhi	oit)	Constant of the state of the st	DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NU 020;	PE NUMBER AND TITLE 0203740A Mane	пте Janeuver	PENUMBER AND TITLE 0203740A Maneuver Control System	System		P. C	PROJECT D484
C. Other Program Funding Summary Other Procurement, Army BA9320 Maneuver Control System Spares - BS9710	FY 1995 FY 1996 0 18221 0 97	226 FY 1997 221 19126 97 0	FY 1998 16157 0	FY 1999 18865 0	FY 2000 42208 0	FY 2001 55847 0		To Compl 0 20389	Total C <u>ost</u> 568424 66486
Acquisition Program Baseline Approval Test & Evaluation Master Plan Approval MCS Technical Test/Customer Test Award BLK IV Contr/Begin V12.1 Dev V12.01 IOT&E Task Force XXI Participation Begin V12.2 SW Dev ASARC Milestone III DAB *Milestone Complete	FY 1995 2 3 4	- * * × × ×	FY 1996 2 3 X X X X X	4 ×	FY 1997 X X X X	Γε ××			
Project D484		Page 12 of 14 Pages	14 Pages			Exhib	i R-2 (P	Exhibit R-2 (PE 0203740A)	
		1344							





RDT&E P	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EMENT/PR	ROJECT (SOST BI	REAKDO	OWN (R-	(8)	DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development	m Developme	nt		PE NUMBER AND TITLE 0203740A Mane	AND TITLE	ıver Contr	PE NUMBER AND TITLE 0203740A Maneuver Control System		PROJECT D484	F
A. Project Cost Breakdown Major Contracts Support Contracts In-House Support GFE/Other Total	ry and Planning I	formation	FY 1995 11237 743 3887 800 16667	FY 2	FY 1996 23672 561 3443 3206 30882	EY 1997 20428 484 3485 790 25187				
Performing Organizations Contract Government Contract Government Method/Type Awar Performing or Funding Oblig Activity Vehicle Date Product Development Organizations Block IV C/CPIF MAY TKC C/CPIF/AF VAR Other Cntrs C/Various VAR CECOM Matrix In-House CPIF/CPAF NOV Support and Management Organizations In-House Other Cntrs C/Various CONTRICTOR OTTE OTTE CONTRIBUTIONS CONTRIBUTION OTTE	t. /Type Award or ing Obligation Date nizations MAY 96 /AF VARIOUS nus VARIOUS PAF NOV 87 Drganizations nus zations	Performing Activity EAC TBD	Project Office EAC 72000 54479	Total Prior to EY 1995 0 18013 155596 6133 20795 30769	FY 1995 0 9945 1292 1863 48 1976 743	FY 1996 1000 18543 4129 1735 1708 561 932 1042	FY 1997 11000 7978 1450 1770 1715 484	Budget to Complete 60000 0 7309 3600 1132 2890	11-1	Total 72000 54479 169776 15101 20843 30769 23970 17761 5730
Project D484			Page	Page 13 of 14 Pages	Bes		Exhib	Exhibit R-3 (PE 0203740A)	(40A)	

RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	ZEAKDO	VN (R-	energy of the second state	DATE March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Mane	AND TITLE A Maneu	iver Contr	TITLE Maneuver Control System		PROJECT D484
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
ATCCS Contraction Property: None Support and Management Property: None Test and Evaluation Property	7159 350	586	0 1232	0 0	1700	3868
Subtotal Product Development	238815	13734	26639	22198	72609	373995
Subtotal Support and Management Subtotal Test and Evaluation Total Project	27712 1517 268044	2719 214 16667	2269 1974 30882	2199 790 25187	6832 2890 82331	41731 7385 423111
						ng nguyang panggapang panggapang ng nguyang
Project D484	Page 14 of 14 Pages	ges		Exhib	Exhibit R-3 (PE 0203740A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	FION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE N	March 1996	9
вироет Астіvіт 7 - Operational System Development	t		PE NI 020 Imp	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	רוזנה Aircraft M Air Progra	odificati m	ons/Prod	uct		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	4538	2262	194	193	0	0	0		0	7187
DB75 TRACTOR CHECK	411	0	0	0	0	0	0		0	411
D179 CH-47 Product Improvement	0	1778	0	0	0	0	0		0	1778
D423 AH-64 Product Improvement	1401	0	0	0	. 0	0	0		0	1401
D430 Improved Cargo Helicopter	2726	484	194	193	0	0	0		0	3597

integration for the addition of Alternate Laser Code (ALC) to the Apache. The Improved Cargo Helicopter (ICH) program began in FY 1995. This funding will definitize a sealing tactical fuel tank for long range deployment. This tank will extend the flight range of the CH-47D. The AH-64 PIP provides the necessary development, testing and program to extend the life of the CH-47D cargo helicopter. The projects in this Program Element support development efforts for system upgrades and are correctly placed in Budget Activity 7. Mission Description and Budget Item Justification: The Tractor Check Program is classified. The CH-47D Product Improvement will develop a 1050-gallon self-

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Exhibit R-2 (PE 0203744A)

RDT&E BUDGET ITEM JUST			SNO		IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203744A Aircr	DE NUMBER AND TITLE 0203744A Aircraft Modifications/Product	odification	ons/Prod	uct		PROJECT D179
				rovemer	Improvement Program	m				
COST (In Thousands)	FY 1995 F Actual E	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Cost to Total Cost
D179 CH-47 Product Improvement 0	0	1778	0	0	0	0 0 0	0		0	1778

a 1050-gallon self-sealing tactical fuel tank for long range deployment. In May 95, the FY 95 funding was approved by Congress to be used for initial studies for Improved A. Mission Description and Budget Item Justification: Project D179 - CH-47 Product Improvement: The CH-47 Product Improvement was initially planned to develop Cargo Helicopter. This effort is a higher priority effort than the fuel tanks, so funding in FY 96 will also be reprogrammed to Project D430 Improved Cargo Helicopter. The following information on this Project addresses execution of funding for Improved Cargo Helicopter.

Acquisition Strategy: Studies and analysis will be performed utilizing contractor and inhouse support.

FY 1995 Accomplishments: Project Not Funded

FY 1996 Planned Program:

- 1420 Vibration Analysis
- 313 Inhouse Support 5 Revised Economic Assumption not available for execution
 - 40 SBIR/STTR

Total 1778

FY 1997 Planned Program: Project Not Funded

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY1996)	2812	1828	0	
Appropriated Amount (FY 1995)	2753			
Adjustments to FY 1995	-2753			
Appropriated Amount (FY 1996)		1796		
Adjustments to FY 1996		-18		
Adjustments to Budget Year (FY 1997) since FY 1996				
President's Budget				
Current Budget Submit/President's Budget	0	1778	0	
Project D179	Pag	Page 2 of 12 Pages		Exhibit R-2 (PE 0203744A)







RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	DATE March 1996
вирдет астіліту 7 - Operational System Development	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	PROJECT oduct D179
Change Summary Explanation: Funding: FY 95 Funds reprogrammed to Project D430 Improved Cargo as a higher priority effort. FY 96 Funds adjusted (-18) for Revised Economic Assumptions.	a higher priority effort.	
C. Other Program Funding Summary: No other funding has been identified for this effort.	r this effort.	
D. Schedule Profile FY 1995	FY 1997	4
n		-
Project D179	Page 3 of 12 Pages	Exhibit R-2 (PE 0203744A)

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RDT&E PROGRAM ELEMENT/PROJECT		COST BREAKDOWN (R-3)	-3) DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203744A Aircr Improvement Page 1	PENUMBER AND TITLE 0203744A Aircraft Modifi Improvement Program	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	ă O	PROJECT D179
A. Project Cost Breakdown Contract Engineering Program Management Support Revised Economic Assumption not available for execution SBIR/STTR Total	FY 1995 FY 1996 0 1420 0 313 5 40	996 FY 1997 420 0 313 0 5 40			
B. Budget Acquisition History and Planning Information					e de la companya de
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Total Office Prior to EAC FY 1995 F	FY 1995 FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Boeing Defense & SS/FP Jun 96 ATCOM	NA	1420			1420
Support and Management Organizations Army Aviation &		163			163
Troop Command Army Training &		150			150
Doctrine Revised Economic Assumption not		\$			ν.
available for execution SBIR/STTR Test and Evaluation Organizations - NA		40			. 40
Government Furnished Property: Not Applicable					
Project D179	Page 4 of 12 Pages		Exhibit R-3 (P	Exhibit R-3 (PE 0203744A)	
	0.00				





RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	A Aircraft nent Prog	: Modifica jram	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	uct	PR O	РРОЈЕСТ D179
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Prior to FY 1995	FY 1995	FY 1996 1420 358 1778	FY 1997		Budget to Complete	Total Program 1420 358 1778
Project D179	Page 5 of 12 Pages	S		Exhibi	t R-3 (Pi	Exhibit R-3 (PE 0203744A)	

RDT&E BUDGET ITEM JUS	EN JUS	TIFICA	RONOI	TIFICATION SHEET (R-2 Exhibit)	2 Exhi	bit)	ig min nu nataramen	DATE	March 1996	ဖ
BUDGET ACTIVITY 7 - Operational System Development	ب		PE NI 020	PE NUMBER AND TITLE 0203744A Aircr	пте Vircraft M	odificati	PENUMBER AND TITLE 0203744A Aircraft Modifications/Product	uct	T.	PROJECT D423
			Ē	Improvement Program	nt Progra	m				
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	97 FY 1998 FY 1999 FX 1899 FX	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D423 AH-64 Product Improvement	1401	0	0	0	0	0	0		0	1401

Units (MRTUs). Integration of the Longbow launcher will be accomplished and a Launcher Interface Assembly (LIA) will be added to provide power requirements to the Longbow launcher. Also included are the software modifications to the Fire Control Computer (FCC) and software and hardware modifications to the Laser Electronics Alternate Laser Code (ALC) to the Apache. Design includes the elimination of the Remote Hellfire Electronics (RHEs) and four (4) pylon Multiplex Remote Terminal Unit (LEU). Changes in the mux architecture will also occur. The addition of the ALC will ensure optimum Hellfire performance on a modern battlefield with known A. Mission Description and Budget Item Justification: This program element (PE) provides the necessary development, testing and integration for the addition of counter measures and will allow optimal use of the planned Electro-Optic Counter Measures (EOMC) to the Hellfire missile. ALC will also be used on the Longbow Apache.

Acquisition Strategy: ALC development will lead to the request for a Class I Engineering Change Proposal (ECP) from the prime contractor and the award of a sole source contract for the integration of ALC on the AH-64A. The ALC will also used on the Longbow Apache.

FY 1995 Accomplishments:

- 155 First Prototype
- 500 Aircraft integration and system test
 - 256 Flight testing
- 100 Final data item deliveries
 - 390 Inhouse Support
 - 140

FY 1996 Planned Program: Project Not Funded

FY 1997 Planned Program: Project Not Funded

Project D423

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Exhibit R-2 (PE 0203744A)



RDT&E BUDGET ITEM JUST	FICATION	TIFICATION SHEET (R-2 Exhibit)	-2 Exhib	oit)	DATE	March 1996	
вирдет астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	ritle Nircraft Mo nt Prograr	odificatio n	ns/Product	P. Q	РRОЈЕСТ D423
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to Budget Year (FY 1997) since FY 1996	FY 1995 1125 1101 300	<u>FY 1996</u> 0	F <u>Y 1997</u> 0				
President's Budget Current Budget Submit/President's Budget	1401	0	0				*****
Funding Change Explanation: Funding: FY 95 increased (+300/cost growth).							
C. Other Program Funding Summary	FV 1996 FV 1997	997 FY 1998	FV 1999	FY 2000	FY 2001	To	Total Cost
			24251	21505	17311	3313	92264
This procurement funding represents only the portion of this line to be used for this effort. The procurement line (SSN) includes additional funding for other modification efforts.	be used for this	effort. The proc	ırement line (SSN) include	s additional fund	ing for other modif	ication
D. Schedule Profile FY 1995	4	FY 1996	4	FY 1997	7 4		
First Prototype Aircraft Integration Flight Test			•				ner odel pe o Green de Adde Maustación (Seri
Project D423	Page	Page 7 of 12 Pages			Exhibit R-2	Exhibit R-2 (PE 0203744A)	
		1353					

RDT&E PROGRAM ELEMENT/P		MENTIPRO	JECT O	OST BR	EAKDO	ROJECT COST BREAKDOWN (R-3)	3	DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	opment		and the state of t	PENUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	AND TITLE A Aircra ment Pro	ft Modific gram	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	luct		PROJECT D423
A. Project Cost Breakdown Contractor engineering support Testing Hardware Procurement Total			FY 1995 455 846 100 1401	FY 1996 0 0	0 0 966	FY 1997 0 0 0				
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Vehicle Date E	Planning Information Pobligation Date	rmation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997		Budget to Complete	Total Program
McDonnell SS/FFP Apr 94 Douglas Helicopter Support and Management Organizations: N/A Test and Evaluation Organizations: N/A	r 94 ns: N/A A	N/A	N/A	4881	1401					6282
Government Furnished Property Not Applicable	Applicable									The Part of the Pa
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation				4881	1401					6282
Total Project				4881	1401					6282
Project D423			Page	Page 8 of 12 Pages	SS		Exhib	Exhibit R-3 (PE 0203744A)	0203744A)	





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	ION SE	HEET (R	-2 Exhi	bit)		DATE	March 1996	9
вирбет АстіvітУ 7 - Operational	вирдет астіліту 7 - Operational System Development			PE NU 020 Imp	PE NUMBER AND TITLE 0203744A Aircr Improvement Pr	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	odificati m	ons/Prod	uct	.	РКОЈЕСТ D430
Ö	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D430 Improved Cargo Helicopter	. Helicopter	2726	484	194	193	0	0	0		0	3597
A. Mission Descrip lift capability into the 1982. These modific and correct known de ages, improve engine program will be the t	A. Mission Description and Budget Item Justification: This is a development program to extend the life of the CH-47D cargo helicopter. This funding will assure heavy lift capability into the 21st century. The CH-47D modernization program began in FY 81 with the modernization of nine aircraft. Delivery of these aircraft began in March 1982. These modified aircraft have now been in use for 14 years with a total of 34 years on the airframe itself. The intent is to study the feasibility of service life extension and correct known deficiencies. This program will study the necessary effort required to sustain the heavy lift capability, decrease operation and support costs as the fleet ages, improve engine power and incorporate a new electronics/architecture system for compatability with the digital battlefield and to replace obsolete equipment. This program will be the basis for establishing an overhaul, modernization, upgrade or retrofit program to meet the readiness needs of the future for heavy lift capability.	ation: This i odernization is for 14 years study the necelectronics/ault, modernizs/ault, modernizs	s a developi program be, with a total essary effor chitecture s;	nent prograr gan in FY 81 of 34 years t required to ystem for co	n to extend to with the mon the airfra sustain the Impatability	the life of the odernization odernization odernization one itself. The oderny lift cap with the digi	of nine airc of nine airc he intent is t pability, deci tal battlefiel	rigo helicop raft. Delive o study the rease operat d and to rep s of the futur	ter. This fury of these a feasibility of ion and supplace obsolete for heavy	is a development program to extend the life of the CH-47D cargo helicopter. This funding will assure heavy program began in FY 81 with the modernization of nine aircraft. Delivery of these aircraft began in March with a total of 34 years on the airframe itself. The intent is to study the feasibility of service life extension essary effort required to sustain the heavy lift capability, decrease operation and support costs as the fleet chitecture system for compatability with the digital battlefield and to replace obsolete equipment. This ation, upgrade or retrofit program to meet the readiness needs of the future for heavy lift capability.	ure heavy in March extension he fleet This
Acquisition Strateg.	Acquisition Strategy: Initial studies and program planning will	lanning will	be done util	lizing contra	ctor and inh	be done utilizing contractor and inhouse support.					200 Sec 150
FY 1995 Accomplishments: 245 Surviva 500 Concep 200 Fleet St 382 Operati 754 Electro 186 Prograr 300 Tradeot 159 Inhouse Total 2726 FY 1996 Planned Program: 222 Inhouse 224 Inhouse 1 Revised 1 SBIR/S Total 484	hments: Survivability/Vulnerability Study Concept Formulation Fleet Sustainment Study Operation and Support/Vibration Study Electronic/Architecture Study Programmatic Documentation Tradeoff Determination/Best Technical Approach Inhouse Support Inhouse Support Program: Inhouse Support S	udy ion Study Fechnical Ap	proach	ıtion							
Project D430			American de la companya de la compan	Page 9 of 12 Pages	12 Pages			Exhib	it R-2 (PE	Exhibit R-2 (PE 0203744A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION	SHEH (R.	2 Exhibit)	DATE March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	PE O	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	PENUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	A CONTRACTOR OF THE CONTRACTOR	PROJECT D430
FY 1997 Planned Program: ◆ 194 Inhouse Study Effort & Inhouse Support Total 194					
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995	FY 1995 0 0 +2726	FY 1996 498	FY 1997 199		300 C + 10 T
Appropriated Amount (FY 1996) Adjustments to FY 1996		489			and the second s
Adjustments to Budget Year (FY 1997) since FY 1996			S-		
Current Budget Submit/President's Budget	2726	484	194		
Change Summary Explanation: Funding: FY 95 Funds were appropriated to Project Element D179 and reprogrammed by Congressional approval to Project Element D430. FY 96 Funds adjusted (-5) for Revised Economic Assumptions FY 97 Funds adjusted (-5) for Revised Economic Assumptions	0179 and repro sumptions sumptions	ogrammed by Cor	ngressional approval to Proje	ct Element D430.	
C. Other Program Funding Summary: 3931 in FY 96 was appropriated in Project Element 063003, Project D368 for this effort. There are no other future RDT&E efforts for this program at this time. Aircraft Procurement Appropriations (AAACIP CH-47 CIP) funding begins in FY 02.	ated in Project ons (AAACIP (Element 063003, CH-47 CIP) fundi	, Project D368 for this effort. ing begins in FY 02.	There are no other future RD	ræe
D. Schedule Profile FY 1995	4	FY 1996 2 3	FY 1997	4	
Concept Formulation Survivability/Vulnerability Study Fleet Sustainment Study	×		×		
Study	××	×			
Best Technical	×				
Project D430	Page 10	Page 10 of 12 Pages		Exhibit R-2 (PE 0203744A)	The second secon





Performing Organizations Performing Organiza	RDT&E PROGRAM ELEMENT/	RAM EL		PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO	WN (R-	3) DATE	те Магс h 1996	96
se Support In soft available for obligation In soft and Planning Information In soft and Planning Informa	ирвет астіvіту ' - Operational System De	velopmen	ı,		PE NUMBER 0203744 Improve	AND TITLE A Aircra' ment Pro	ft Modific gram	ations/Produc	ţţ.	РКОЈЕСТ D430
ing Project Total (14) Office Prior to Office Prior to EAC FY 1995 FY 1995 FY 1996 FY 1996 OM NA NA 186 250 NA NA NA 700 NA 200 NA 200 NA 200 SOC NA NA 100 SOC NA NA NA 100 SOC NA NA NA 100 SOC NA	A. Project Cost Breakdown Contract Studies nhouse Study Effort & Inhouse Supp tevised Economic Assumptions not a BIR/STTR	port available for o	bligation	FY 1995 1486 1240 2726		199 <u>6</u> 250 222 1 11 484	FY 1997 194 194			
Drganizations	3. Budget Acquisition History and	l Planning Inf	ormation							
Contract	erforming Organizations									
or Funding Vehicle Obligation Activity Vehicle Date Date EAC FY 1995 FY 1995 FY 1996 FY 1995 FY 1996 FY 1996 FY 1995 FY 1996)	Award or	Performing	Project	Total					
uct Development Organizations uct Development Organizations ATCOM NA 400 TAR SS/FP Aug 95 ATCOM NA 186 250 SS/FP Sep 95 ATCOM NA 700 700 700 CO SS/FP Sep 95 TRADOC NA 200 200 Ng Defense & SS/FP Feb 96 ATCOM NA 200 200 ng Defense & SS/FP Feb 96 ATCOM NA 200 221 A Aviation & Feb 95 Feb 95 Feb 95 640 221 P Command 7 Training & Dec 95 500 100 rine mand 1100 100		Obligation Date	Activity	Office FAC	Prior to FV 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
uct Development Organizations Aug 95 ATCOM NA 400 TAR SS/FP Aug 95 ATCOM NA 186 250 SS/FP Sep 95 TRADOC NA 700 700 CO SS/FP Feb 96 ATCOM NA 200 SD Defense & SS/FP Feb 96 ATCOM NA 200 B Group NA ATCOM NA 221 A Aviation & Feb 95 Feb 95 Feb 95 640 221 P Command Y Training & Dec 95 Trine 500 100 mand Il Research Training & Tatory 100 100	ACTIVITY VEHICLE	<u>7787</u>		25777	7777	2//1				
IBER SS/FP Aug 95 ATCOM NA 186 250 SS/FP Sep 95 TRADOC NA 700 700 SS/FP Sep 95 TRADOC NA 200 ng Defense & SS/FP Feb 96 ATCOM NA 200 e Group Aviation & Aviation & Feb 95 Feb 95 640 221 p Command Poc 95 500 10 rine mand 100 100 ratory ratory 100 100	VESTAR SS/FP	ns Aug 95	ATCOM	NA		400				400
SS/FP Sep 95 NRL NA 700 SO SS/FP Sep 95 TRADOC NA 200 ng Defense & SS/FP Feb 96 ATCOM NA 200 e Group Feb 96 ATCOM NA 640 221 p Command Feb 95 Feb 95 640 221 rine mand Incompany 100 I Research ratory 100	IBER	Aug 95	ATCOM	NA V		186	250			436
6 ATCOM NA 640 221 5 500 100	Ç	Sep 95	NRL TRADOC	NA AN		700 200				700
5 640 221	Defense &	Sep 93 Feb 96	ATCOM	NA		200				
5 640 221 5 500 1	Space Group	,								
Dec 95 500 100 100	Support and Management Organiz	zations Ech 05				970	221	<i>P</i> 6	93	1048
Dec 95 500	Army Aviation &	re0 93				2	777			
	Trop Command Army Training &	Dec 95				200		100	100	700
	Ooctrine									
	Command					100				100
	Naval Kesearch Jaboratory					201				
Project D430 Page 11 of 12 Pages Ext	Project D430			Page	e 11 of 12 Pa	ges		Exhibit R	Exhibit R-3 (PE 0203744A)	

RDT&E PROGRAM ELEMENT/P	NAN EL		OJECT	COST B	REAKDO	ROJECT COST BREAKDOWN (R-3)		DATE Marc	March 1996	
вирсет астіліту 7 - Operational System Development	velopmen	فيد		PE NUMBER 0203744 Improve	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	ft Modific: gram	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	င်း	A Q	PROJECT D430
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Revised Economic Assumption not available for execution	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997.	Buc	Budget to <u>Complete</u>	Total Program 2
SELIK/STILK Test and Evaluation Organizations - NA Government Furnished Property - Not Applicable	s - NA · Not Applicab	<u>u</u>								
Subtotal Product Development Subtotal Support and Management				Total Prior to FY 1995	FY 1995 1486 1240	FY 1996 250 234	FY 1997 194	Buc	Budget to Complete 193	Total Program 1736 1861
Subtodal Test and Evaluation Total Project					2726	484	194		193	3597
Project D430	to an file title i come company post post post post post post post post	e de la companya de l	Pag	Page 12 of 12 Pages	ıges		Exhibit	Exhibit R-3 (PE 0203744A)	3744A)	And the second s





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE	March 1996	6
BUDGET ACTIVITY 7 - Operational System Development	t		PE NI 020 Imp	PE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	⊓π∟E \ircraft E⊨ nt Progra	ngine Co m	mponent		d J	РRОЈЕСТ D106
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D106 Aircraft Engine Component Improvement Program (CIP)	3123	3999	2947	2936	2928	2993	3054		Continuing	Continuing

components to correct service revealed deficiencies, improve safety, enhance readiness, and reduce Operating and Support (O&S) costs. In addition, CIP includes redesign, A. Mission Description and Budget Item Justification: Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft test, and requalification of engine components identified as part of the Army's new flight safety parts service life surveillance program. CIP included in the RDT&E vice procurement appropriations in accordance with Congressional direction. The tasks in this project support development of upgrades to current production vehicles and are appropriately funded in Budget Activity 7. Acquisition Strategy: Improved designs will be implemented via Engineering Change Proposal (ECP) and follow-on procurement or modification to a production contract to introduce the improved hardware.

FY 1995 Accomplishments:

•	1669	1669 T700 Engine : Continued update of life limits on engine components utilizing improved analytical and modeling techniques. Completed qualification testing of the Blackhawk Digital Electronic Control Unit (DECU) improvements to enhance Electromagnetic Interference (EMI) capability and
		operability. Initiated program to develop and qualify an advanced fuel boost pump that is much less susceptible to air ingestion and therefore reduce
		engine flameouts. Completed program to reduce friction in the torquemeter design by utilizing better sealing of the power turbine shaft and reducing the reference shaft stiffness.
•	1000	_
•	454	GTCP36 APU: Designed an erosion resistant turbine wheel for BLACKHAWK Auxillary Power Units (APU). Designed a feature to preclude
		erroneous chiplight warnings. Designed improved planetary gears to preclude gear failures; improve reliability and durability of BLACKHAWK
		APUs.
Total	3123	

1359

Page 1 of 5 Pages

Project D106

Exhibit R-2 (PE 0203752A)

	RDT&E BUDGET ITEM JUSTIFICATIO	IFICATION SHEET (R-2 Exhibit)	DATE March 1996
вирсет Астіvіту 7 - Operationa	вирсет Астіуітү 7 - Operational System Development	PE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	PROJECT t D106
FY 1996 Planned Program:	Oneine: Continue update of life limits	on envine components utilizing improved analytical and modeling techniques. Completed analytication	hnionec Completed analification
	testing of the Apache DECU improvements to qualification testing of an advanced fuel boos program to update the mission profiles used i resilience to impact torque to preclude shaft to	from a supported and the following and the following and operability and operability and operability and operability and therefore red by gathering field data. Redesign and test a new IPS bl	initions. Compress quantitions ity. Complete design and perform ice engine flameouts. Continue ower shaft with improved torsional
• 1158	T55 Engine : Continue bearing improvement program to reduce cost and improve reliability and fatigue life. Conclude machined combustion liner program to improve durability and survivability and reduce O&S costs. Conclude pinned first turbine blade program to prevent catastrophic engine failure from blades shifting forward. Continue development of improved compressor impeller to improve efficiency and reduce cost.	duce cost and improve reliability and fatigue life. Conc O&S costs. Conclude pinned first turbine blade progra t of improved compressor impeller to improve efficience.	lude machined combustion liner m to prevent catastrophic engine v and reduce cost.
348888	GTCP36 APU: Qualify improved durability/reliability design planetary gears for the GTCP36-150 APU for the UH-60 Black Hawk. LOLA Pump: To design, test and qualify a Liquid or Light-ends Air (LOLA) fuel pump for UH-60 Black Hawk and AH-64 Apache	//reliability design planetary gears for the GTCP36-150 APU for the UH-60 Black Hawk. Liquid or Light-ends Air (LOLA) fuel pump for UH-60 Black Hawk and AH-64 Apache to prevent	H-60 Black Hawk. nd AH-64 Apache to prevent
• 88 • 11 Total 3999		: Technology Transfer (STTR)	
FY 1997 Planned Program: • 1435 T700 E update	ingine: Continue update of life limits the mission profiles used in life analysess of compressor and performance r	on engine components utilizing improved analytical and modeling techniques. Continue program to sis by gathering field data. Improve the A-sump pressurization to eliminate oil leakage and maintain etention. Redesign the gas generator accelerator to reduce gas generator components cooling air the	hniques. Continue program to inate oil leakage and maintain or components cooling air thereby
• 1163		educe cost and improve reliability and fatigue life. Con evelop fireproof fuel and oil lines to bring them up to co	clude improved compressor arrent safety standards. Redesign
349		ete alloy. CP36 APUs to reduce sand erosion the major cause for	APU removal during Desert
Total 2947	Sincia/Storm; improve readiness/duraomity while readong O&S cost for the UH-oU black Hawk and AH-o4 Apache.	J&S cost for the UH-ou Black Hawk and AH-o4 Apact	16.
agozza kongokowo wykazania w wiasona je			
Project D106	Pa	Page 2 of 5 Pages Exhit	Exhibit R-2 (PE 0203752A)





Per Numbers Another Experiment Per Numbers Another Experiment Program Per Numbers Per	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	(-2 Exhibit)	DATE March 1996	9
rece FY 1995 FY 1996 FY 1996 3123 gaction (+342). FY 95 rescission for FFRDC/Consulting Svcs (-4500). There are no other RDTE or other Appropriation efforts. FY 1995 FY 1995 FY 1995 FY 1995 FY 1997 FY 1997 TX X	BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND 0203752A / Improvement	π∟E \ircraft Engine Comp of Program		PROJECT D106
7435 3012 3025 7281 -4158 4040 -41 g action (+342). FV 95 rescission for FFRDC/Consulting Svcs (-4500). or revised economic assumptions or revised economic assumptions 1 2 3 4 1 2 3 4 1 2 3 X X X X X X X X X X X X X	FY	FY 1996	FY 1997		
#4040 -41 -78 gaction (+342). FY 95 rescission for FFRDC/Consulting Svcs (-4500). or revised economic assumptions or revised economic assumptions There are no other RDTE or other Appropriation efforts. FY 1995 FY 1995 FY 1997 FY 1995 FY 1997 X X	•	3012	3025		
g action (+342). FY 95 rescission for FFRDC/Consulting Svcs (-4500). or revised economic assumptions or revised economic assumptions There are no other RDTE or other Appropriation efforts. FY 1995 FY 1995 FY 1996 FY 1997 X X	Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	4040 -41	8/-		
g action (+342). FY 95 rescission for FFRDC/Consulting Svcs (-4500). or revised economic assumptions or revised economic assumptions or revised economic assumptions or revised economic assumptions There are no other RDTE or other Appropriation efforts. FY 1995 FY 1995 FY 1997 X X X		3999	2947		
There are no other RDTE or other Appropriation efforts. FY 1995 FY 1996 FY 1997 X X X X	rogramming action (+342). FY ised (-41) for revised economic ised (-78) for revised economic	FFRDC/Consulting	Svcs (-4500).		
FY 1995 FY 1996 FY 1997 X X X X X X X X X X X X X	C. Other Program Funding Summary: There are no other RDTE or other A	opropriation efforts.			e e e e e e e e e e e e e e e e e e e
**	FY 1995 1 2 3	FY 1996	FY 199	4	
	*	×	×		
Project D106 Exhibit R-2 (PE 0203		age 3 of 5 Pages		Exhibit R-2 (PE 0203752A)	

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RDT&E BUDGET	TEM JUSTIFICATION	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	nent	PE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	PROJECT D106
D. Schedule Profile	1 7 3 1	FY 1996 FY 1999	3 /
T55 Engine: Design and develop improved bearings; incorporate state-of-the-art advancements to enhance reliability, durability, and readiness; Qualify machine combustor liner; Design high efficiency light weight gearbox. GTCP36 APU: Redesign clutch assembly. GTCP36 APU: Design an erosion resistant turbine wheel for BLACKHAWK APUs; Design a feature to preclude chiplight warnings. Design improved planetary gears to preclude gear failures. GTCP36 APU: Qualify improved planetary gears; improve reliability and durability; Complete design and qualify pinned gearbox bearing.			
* Denotes Milestone Completion		Page A of 5 Pages	Evhihit R_2 (PE 02037524)
rioject Divo		1 uge 7 0/ 0 1 uges	LATION 1-2 (1 L 0200102N)





	NO SEL FROGINAIM EFFINITION		PROJECT (SOST BI	COST BREAKDOWN (R-3)	WN (R-:	3)	March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	n Developmer	ıt		PE NUMBER AND TITLE 0203752A Aircr Improvement Pr	PE NUMBER AND TITLE 0203752A Aircraft Eng Improvement Program	t Engine gram	D TITLE Aircraft Engine Component ent Program	t	РКОЈЕСТ D106
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation			FY 1995 2781 342 0 3123	FY	F <u>Y 1996</u> 3999 0 0 3999	FY 1997 2947 0 0 2947			
B. Budget Acquisition History and Planning Information Performing Organizations	y and Planning In	formation							
Government Method/Type Performing or Funding Activity Vehicle	Type Award or ng Obligation Date	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Product Development Organizations General Electric SS/CPFF	izations Dec 94		112000	36937	1481	1489	1435	Cont	Cont
(1700) Textron/Lycoming SS/CPFF	Dec 94		57300	16872	1000	1158	1163	Cont	Cont
(T55) Air Force (APU) MIPR Chandler Evans SS/CPFF	Dec 94 Jun 96		16100 1004	12300	300	348 1004	349 0	Cont 1004	Cont 1004
Corp (LOLA) Support and Management Organizations ATCOM (in-	rganizations Dec 94	N/A	N/A	10000	342	0	0	Cont	Cont
house) T53 Engine Test and Evaluation Organizations: Not Applicable	ations: Not Applic	able		352				Cont	Cont
Government Furnished Property: Not Applicable Subtotal Product Development Subtotal Support and Management	erty: Not Applicab nent	ole Je		66109 10352	2781 342	3999	2947	Cont	Cont
Subtotal Test and Evaluation Total Project				0 76461	3123	3999	0 2947	Cont	Cont
Project D106			Pas	Page 5 of 5 Pages	Si		Exhib	Exhibit R-3 (PE 0203752A)	

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RDT&E BUDGET ITEM JUST		S H C	S	TIFICATION SHEET (R-2 Exhibit)	2-2 Exhi	bit)		DATE	March 1996	ဟ
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203758A Digitization	пте Jigitizatio	П			J J	PROJECT D374
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D374 Horizontal Battlefield Digitization 84738	84738	99103	110180	26963	0	0	0		Continuing	Continuing Continuing

technology through new acquisitions, Pre-Planned Product Improvements (P31), and system-component upgrades. The application of common technologies across multiple Area Air Defense Command, Control and Intelligence (FAADC2I), All Source Analysis System (ASAS), Combat Service Support Control System (CSSCS)) with common global positioning system, communications link, and command and control software) required to support live experimentation with a brigade-sized maneuver task force in A. Mission Description and Budget Item Justification. This program element integrates dissimilar combat, combat support, and combat service support platforms (i.e., systems to see, acquire and engage threats while sharing the same information with equal clarity, using advanced technologies and digital communications. To prove out concepts and requirements, near-term efforts will focus on developing a seamless battlefield architecture and digitized appliqué systems (computer with graphics display, tanks, fighting vehicles, aircraft, command/control and logistics/resupply) and battlefield automated systems (i.e. Maneuver Control System (MCS)/Phoenix, Force XXI Battle Command, Brigade and Below(FBCB2)/Brigade and Below Command and Control (B2C2), Advanced Field Artillery Tactical Data System (AFATDS), Forward providing a significant and potentially decisive warfighting improvement to the force. Battlefield digitization allows the Army's primary weapons and battle command FY 1997 and a division-level advanced warfighting experiment in FY 1998. The Army Digitization Office focuses, coordinates and implements all Army digitization systems through an integrated and seamless battlefield architecture improves the capabilities of battlefield systems that fight together as units or integrated task forces, efforts. This project is in Budget Activity 7 since it supports experimentation and modification of equipment in the Army inventory.

requirements will be determined through a series of iterative experiments. A variety of contract types will be used due to the diversity of efforts. All appliqué contracts will be awarded through full and open competition. The appliqué contract will be managed through the Program Executive Officer for Command, Control and Communication Systems. Other communications and software programs necessary for the series of experiments will be managed by the specific hardware and software program managers. Acquisition Strategy. Provide a digital capability to platforms supporting multiple battlefield operating systems that do not have an embedded digital capability, with initial emphasis on meeting the near-term requirements for the designated Experimental Force (EXFOR). Provide three variant appliqués based on platform field and combat environment requirements. Variants include commercial off-the-shelf, ruggedized and near-military specification systems. Final hardware and software

FY 1995 Accomplishments:

- Initiated development of command and control software for brigade and below.
- Initiated development of appliqués and their platform integration
- initiated development of an upgrade to the M1A2 command and control system.
- Supported establishment of a Digitization Integration Laboratory, Army Systems Engineering Office and Joint Interoperability efforts. 4042
 - Supported development of digitization systems architecture
- Initiated simulation, experimentation and evaluation of prototype hardware and software.
 - Initiated development of a data distribution system.

Project D374

Page 1 of 4 Pages

Exhibit R-2 (PE 0203758A)





I System Development ishments: (continued) Obtained avionics equipment for the Expe Initiated interim operational solution for I rogram: Continue development of appliqués and th Continue development of command and c Continue development of a data distributi Initiate development of a data distributi	xperimental Force (EXFOR). or 1st Cavalry Division M1A2 digital connectivity. d their platform integration. d control software for brigade and below standards, and systems engineering. o the M1A2 intervehicular information system. erimental Force (EXFOR). hting Experiment requirements. d their platform integration. ad control software for brigade and below. nd control software for brigade and below. nd coutrol software for brigade and below. nd evaluation of prototype hardware and software.	3758A 3758A 3758A 2 digital c ardware a ferring. Iformation	Digitization connectivity. and software. system.	D374
FY 1995 Accomplishments: (continued) Total 7046 Obtained avionics equipment for the Experimental Force (EXFOF 1301 Initiated interim operational solution for 1st Cavalry Division M1 Total 84738 FY 1996 Planned Program: 23594 Continue development of appliqués and their platform integration 34305 Continue development of command and control software for brigg 8009 Continue development of a data distribution system. 3391 Initiate development of protocols and standards, and systems engi	xperimental Force (EXFOR or 1st Cavalry Division M1. d their platform integration de control software for brigg and evaluation of prototype oution system. standards, and systems engion the M1A2 intervehicular erimental Force (EXFOR). hting Experiment requiremed their platform integration and control software for brig and evaluation of prototype ition system.). A2 digital conn. de and below hardware and s neering. nformation sys	ectivity. software. stem.	
 FY 1996 Planned Program: 23594 Continue development of appliqués and their platform integration 34305 Continue development of command and control software for brigg 8009 Continue simulation, experimentation and evaluation of prototype 3480 Continue development of a data distribution system. 3391 Initiate development of protocols and standards, and systems engine 	d their platform integration de control software for brigg and evaluation of prototype ution system. standards, and systems engion the M1A2 intervehicular erimental Force (EXFOR). hting Experiment requiremed their platform integration and control software for brig and evaluation of prototype ition system.	de and below hardware and steering. nformation sys	software.	
 10800 Continue development of an upgrade to the MIA2 intervehicular information system. 1500 Obtain avionics equipment for the Experimental Force (EXFOR). 14024 Support for TF XXI Advanced Warfighting Experiment requirements. Total 99103 	d their platform integration nd control software for brig nnd evaluation of prototype ttion system.			
 FY 1997 Planned Program: 23454 Continue development of appliqués and their platform integration. 35392 Complete development of command and control software for brigade and below. 32046 Conduct simulation, experimentation and evaluation of prototype hardware and software. 9000 Complete development of data distribution system. 5177 Interoperability: Continue development of protocols and standards and International Command and Control Systems Interoperability and appliqué digital connectivity. Total 110180 	it of protocols and standard gital connectivity.	and and below. and Internatio	oftware. nal Command and Control Systems	s Interoperability Program.
B. Project Change Summary FY 1995 FY Previous President's Budget (FY 1996) 82727 Appropriated Amount (FY 1995) 81125 Adjustments to FY 1995 3613	El .	FY 1996 88567	<u>FY 1997</u> 80631	
1996) Appropriated Value Ir (FY 1997) since		99103 0	29548	
Current Budget Submission/President's Budget	84738	99103	110180	
Project D374 Pages		4 Pages	Exhibit	Exhibit R-2 (PE 0203758A)

RDT&E BUDGET ITEM JUSTIFIC	IFICATION SHEET (R-2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203758A Digitization		PROJECT D374
Change Summary Explanation: FY 1995 \$3613 reprogrammings for applique development; FY 1996 Congressional increase to support TF XXI Advanced Warfighting Experiment requirements. FY 1997 increase for Force XXI experimentation efforts. \$2811 addition in FY 1997 to evaluate appliqué digital connectivity with M1A2 tanks.	nent; FY 1996 Congressional increase to supp efforts. \$2811 addition in FY 1997 to evaluate	ort TF XXI Advanced Warfightin appliqué digital connectivity witi	ng Experiment h M1A2 tanks.
C. Other Program Funding Summary. FY 1995 FY 1996 OMA, PSP 11, PE 118207000 Other Procurement Army Activity 2, SSN W61900 0	36 FY 1997 FY 1998 FY 1999 FY 2000 0 72297 58479 0	FY 2001	To Total Compl Cost Continuing Continuing
D. Schedule Profile. FY 1995 1 2 3 4	FY 1996 FY 1996 T	FY 1997 2 3 4	and and a second se
Roving Sands, TMD Experiment System Design Review Focus Dispatch Advanced Warfighting Experiment (AWE) Critical Design Review Warrior Focus AWE Tactical Internet Integration Test Version 1.0 FBCB2 Software Delivery Hardware Deliveries Complete Brigade Task Force XXI AWE Integrated Product Team (IPT)Review	× × ×	×	
Project D374	Page 3 of 4 Pages	Exhibit R-2 (PE 0203758A)	3758A)
	1366		





RDT&E PROGRAM ELEMENT/PROJE	/PROJECT COST BREAKDOWN (R-3)	(DOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203758A Digit	Σπι∟ε Digitization	PROJECT D374
A. Project Cost Breakdown Hardware Development Software Development Software Development Development, Experimentation, & Evaluation Program Management and Engineering Support Total B. Budget Acquisition History and Planning Information Not Applicable Project D374	FY 1995 FY 1996 16650 18892 21728 32377 36665 40440 9695 7394 84738 99103 ble	EY 1997 21011 33500 46533 9136 110180	Exhibit R-3 (PE 0203758A)

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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TONS	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE	March 1996	6
BUDGET ACTIVITY 7 - Operational System Development	****		PENU 020	PE NUMBER AND TITLE 0203801A Missile/Air I	IITLE Nissile/Ai nt Prograu	PENUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	e Produc	4		
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	The state of the s	Cost to	Total Cost
Total Program Element (PE) Cost	35890	63057	30959	11720	9330	19187	37046	0	Continuing	Continuing
D036 PATRIOT Product Improvement Program	23354	46477	12291	9406	6481	5792	4785		0	365294
D038 Avenger Product Improvement Program	7726	2918	0	0	0	0	0		0	32476
D303 Stinger Product Improvement Program	4810	13662	18668	2314	2849	12439	28465		Continuing	Continuing
D633 THAAD P3I	0	0	0	0	0	0	1898		Continuing	Continuing
D634 THAAD GBR P3I	0	0	0	0	0	926	1898	economic te company and an executive con-	Continuing	Continuing

significantly impact the mission of Air Defense Artillery (ADA). This doctrine calls for US forces to be able to win two nearly simultaneous major regional conflicts and to Mission Description and Budget Item Justification: The changing global threat and the new Army Warfighting Doctrine developed to respond to this changing threat all conduct combat operations characterized by rapid response and a high probability of success while minimizing the risk of significant American casualties. ADA must continually be upgraded and modernized in accordance with the ADA missions. FY 96 is the last year of funding for AVENGER upgrades. The FY 97 budget funds critical improvements to major acquisition programs of PATRIOT and STINGER. The projects support development of upgrades to current equipment and are appropriately funded in Budget Activity 7.

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Exhibit R-2 (PE 0203801A)





RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	ıt	·	PE NI 020 IMp	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	ппсе Iissile/Aiı ıt Prograı	r Defens	e NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program		.	РРОЈЕСТ D036
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D036 PATRIOT Product Improvement Program	23354	46477	12291	9406	6481	5792	4785		0	365294

A. Mission Description and Budget Item Justification D036 - PATRIOT Product Improvement Program: The PATRIOT system is being upgraded through a series of individual materiel changes (MMC) culminating in the attainment of the PATRIOT Advanced Capability - 3 (PAC-3) system. The communication upgrades improve PATRIOT's above and below battalion communication equipment. These changes eliminate PATRIOT peculiar communications equipment and improve PATRIOT's interoperability between systems and between the services.

configurations which are scheduled to be fielded in the same time-frame. Configuration groupings are a convenience for managing block changes of hardware and software and are not a performance-related grouping. However, incremental increases in performance will be determined for each configuration in order to provide benchmarks for Acquisition Strategy: The design objective of the PATRIOT system was to provide a baseline system capable of being modified to cope with the evolving threat. This alternative minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT Program consists of two interrelated acquisition programs - The PATRIOT Growth Program and the PAC-3 Missile Program. Growth program modifications are grouped into configuration testing and for the development of user doctrine and tactics.

FY 1995 Accomplishments:

- 11443 P3I Test Program
- 9368 Communications Upgrades
 - 1793 P3I Test Program Sets
- 750 Responsive Threat Analysis
- Total 23354

FY 1996 Planned Program:

- 5733 P31 Test Program
- 5083 Communications Upgrades
- 750 Responsive Threat Analysis
- 33769 PAC 2 Anti-Cruise Missile Upgrade
- 131 Revised Economic Assumption (Not available for execution)
 - 1011 SBIR/STTR

Total 46477

Project D036

Page 2 of 14 Pages

Exhibit R-2 (PE 0203801A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICA	HO NOI		2 Exhit	it)	DATE	TE March 1996	966	
BUDGET ACTIVITY 7 - Operational System Development		PE NUN 0203 Impi	PE NUMBER AND TITLE 0203801A Miss Improvement Pr	E NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	PENUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	Product		PROJECT D036	CT
 FY 1997 Planned Program: 5600 P3I Test Program 5941 Communications Upgrades 750 Responsive Threat Analysis Total 12291 									
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Value (FY 1995) Adjustment to FY 1995	EY 1995 24294 23809		FY 1996 12823	FY 1997 12626					
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since			46946 -469	-335					eleganis trans a trivia di Signi e e e e e e e e e e e e e e e e e e e
Fr 1990 President's Budget Current President's Budget Submit	23354		46477	12291					erent de wood on the
Change Summary Explanation: Funding: FY 1995: Below Threshold Reprogramming (-455) FY 1996 Revised Economic Assumption not avail FY 1997 Revised Economic Assumption (-335)	ogramming (-455). umption not availa umption (-335)	ng (-455). not available for execution (-469). (-335)	tion (-469).						et es en
C. Other Program Funding Summary FY	FY 1995 FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete		Total Cost
Missile Procurement, Army Budget Activity 2 - PATRIOT (C49100) Budget Activity 3 - PATRIOT Mod (C50700)	8799 4924 25916 6767	2862 11464	0 14737	0 15956	36538	0 19729	4	01	9636859
D. Schedule Profile F	FY 1995	- F)	FY 1996	-	FY 1997	7 2			
Contractor Test & Evaluation Development Test & Evaluation	· ×	· ×)	-					
Project D036		Page 3 of 14 Pages	4 Pages		i a 1 de ⁶⁰ an 20 magness age (n. 18 a phraitheach	Exhibit R	Exhibit R-2 (PE 0203801A)	(A)	





RDI	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	OJECT (SOST BE	REAKDO	PROJECT COST BREAKDOWN (R-3)		DATE March 1996	96
вирдет АСТІVITY 7 - Operational System Development	l System De	velopmen			PE NUMBER AND TITLE 0203801A Miss Improvement Pr	oe number and title 0203801A Missile/Air I Improvement Program	e/Air Defe ogram	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program		РРОЈЕСТ D036
A. Project Cost Breakdown Contract Engineering Support Program Management Support Developmental Test and Evaluation Total	eakdown g Support nt Support and Evaluation			EY 1995 11580 4588 7186 23354	E	FY 1996 38115 2227 6135 46477	EY 1997 2000 1791 8500 12291			
B. Budget Acquisition History and Planning Information	ion History and	l Planning Info	ormation							
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Product Development Organizations	izations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u> ns	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 199 <u>5</u>	FY 1995	FY 1996	FY 1997	Budget to <u>Complete</u>	Total <u>Program</u>
Raytheon DAAH0182CA181 DAAH0187CA025 DAAH0189C0458 DAAH0192C0036 Small Contracts					3722 22455 23228 5000 1168					3722 22455 23228 5000 1168
General Electric DAAH0187CA006 Brunswick Corp					4824					4824
DAAH0189C0167 Martin Marietta					3100	c c	•			3100
DAAH0192C0301 Raytheon DAAH0191C0602	SS/CPFF SS/CPIF	15Ju192 22Apr92	546 <i>3</i> 20702	20702	2963	800 4775	001			3863 23077
DAAH0192C0006 DAAH0195C0043 PAC 2 Anti-Cruise	SS/CPAF SS/CPAF	27Jan92 01Feb95			56460	9009	3646 34369	2000	4234	56460 15885 34369
Project D036				Pag	Page 4 of 14 Pages	es		Exhibit	Exhibit R-3 (PE 0203801A)	

RDT®	E PROG	RAWEL	RDT&E PROGRAM ELEMENT/PR	ROJECT	COST B	REAKDO	COST BREAKDOWN (R-3)		DATE March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	ystem De	velopmen	وسي		PE NUMBER AND TITLE 0203801A Miss Improvement Pr	ve number and title 0203801A Missile/Air I Improvement Program	e/Air Defe ıgram	PENUMBER AND TITLE O203801A Missile/Air Defense Product Improvement Program		PROJECT D036
actor or rnment rming ity ort and Manage	Contract Method/Type or Funding Vehicle ement Organiz	Award or Obligation <u>Date</u> zations	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to <u>Complete</u>	Total <u>Program</u>
DAAH0187CA008 DAAH0190C0487 DAAH0194C0105 In-house Support	C/CPAF	31Jan94			2270 6266 2093 9480	3251 1337	791	791	1058 2912	2270 6266 7984 16165
#01 #01	Organizations 1095 1095/MIPR	o.				2322	1962	2100	5478 6208	11862
Other Govt Agen N RDEC and Other Govt Agen	MIPR				95377	2023	1326	3200	6574	13123
Government Furnished Property: None.	ed Property:	None.								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	lopment Management uation				141222 20109 95377 256708	11580 4588 7186 23354	38115 2227 6135 46477	2000 1791 8500 12291	4234 3970 18260 26464	197151 32685 135458 365294
Project D036			an english yang biran dan dan dan berahas in diseberah	Pa_{q}	Page 5 of 14 Pages	ges	State of the State	Exhibit	Exhibit R-3 (PE 0203801A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SI	HEET (R	k-2 Exhil	bit)	ρΦ	DATE Ma	March 1996	(0
вирсет астічіт 7 - Operational System Development	ţ		PE NE 020 IMp	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	пт <u>ге</u> fissile/Ai nt Progra	r Defens	e NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program		# O	РРОЈЕСТ D038
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D038 Avenger Product Improvement Program	7726	2918	0	0	0	0	0		0 ·	32476

sensor data. The Stinger-RMP missile will be far more lethal since the improved fire control can upload software at launch time which is optimized for the specific target of Control(C2)/Manual, Fire Control-1, Command and Control/Automatic, and improved Remote Control Unit (RCU) subsystems. These subsystems will increase Avenger's operate ECU under all climatic conditions). Additionally, this PIP will increase the lethality and survivability of the total system through the addition of the Command and ability to process target data, resulting in increased probability of target detection and identification by cueing the gunner to the target location using air track data reported system and Stinger Block II missile system. Project funding for FY 1996 provides for concept development and design for increased capability of the AVENGER Control bunkers. Flight evaluations of complementary missile utilizing the Avenger system will provide the Army with the ability to determine complementary capabilities to the Stinger and Air-to-Air Stinger missiles. Project funding in FY 1995 provides for an operational assessment to include comparison of the ground-to-air Starstreak missile by Army and USMC C2 systems. The gunner can then launch (without delay for visual identification), using the ID data in the C2 report and locally obtained passive Electronics (ACE) to provide for a more robust processor having standardized processor architecture and ADA software. This upgrade is essential for other follow-on A. Mission Description and Budget Item Justification D038 - Avenger Product Improvement Program: The Avenger PIP permits worldwide employment of interest. The system will be more survivable because the improved RCU will allow the gunner to engage with full system capability from protected positions such as Avenger through the addition of an Environmental Control Unit (ECU, with cooling for hot desert climates) and Prime Power Unit (PPU, to provide power needed to upgrades which will facilitate gunner communication with the FAAD command and control system and non cooperative target recognition.

complementary missile to Stinger on the Avenger platform was completed through a sole source cost reimbursable contract to Boeing. The FY 95 operational assessment of safety issues. The first fire units were equipped with an interim solution during Desert Storm, with the first production scheduled for mid-FY 96. No further R&D contracts Acquisition Strategy: Initial funding provided Phase I P3I concept development and design for C2 Manual and Automatic, Fire Control, RCU, and ECU/PPU. Concepts were developed and refined for subsystem and software requirements. Gunner heat stress in the Avenger turret made the ECU/PPU the first priority for production due to the HVM to Stinger Block II in terms of requirements, capabilities and costs has been canceled. Further progression of FY 95 program is on OSD withhold pending are scheduled for these programs. The Congressionally-directed FY 94 evaluation to determine the suitability of the Starstreak Hyper-Velocity Missile (HVM) as a completion of Phase I of the HVM/Apache program.

FY 1995 Accomplishments: Pending release of funds, plans remain as follows:

7726 Apply to Phase II HVM/Apache program upon successful completion of Phase I by PE 63003A.

Project D038

1373

Page 6 of 14 Pages

Exhibit R-2 (PE 0203801A)

RDT&E BUDGET ITEM JUST	FICATION SHEET (R-2 Exhibit)	Ho Ro Ro		2 Exhib		DATE	E March 1996	9
BUDGET ACTIVITY 7 - Operational System Development		PE NUME 02038 Impro	PE NUMBER AND TITLE 0203801A Miss Improvement Pi	PENUMBER AND TITLE 0203801A Missile/Air I Improvement Program	Defens(PENUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program		РКОЈЕСТ D038
 FY 1996 Planned Program: 2844 Apply to Concept Development and Design of the AVENGER Control Electronics Upgrade. 66 SBIR/STTR. 8 Revised economic assumption not available for execution. Total 2918 	f the AVENO	GER Contro	ol Electronic	cs Upgrade.				
FY 1997 Planned Program: No program planned.								
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Value (FY 1995)	FY 1995 7892 7726	FY 1996		FY 1997				
Appropriated Amount (FY 1996) Adjustments to FY 1996 Adjustments to Budget Year (FY 1997) since		56	2948 -30					
FY 1996 President's Budget Current President's Budget Submit	7726	25	2918					
Change Summary Explanation: Funding: FY 1995: Below Threshold Reprogramming (-166) FY 1996: Revised Economic Assumption (-30)	(99							
C. Other Program Funding Summary	1 2004 X3	. 7007 Xa	EV 1000	EV 1000	EV 2000	1000 XII	To	Total
•			F I 1990	F I 1999	F 1 2000	F I 2001	Complete	<u>2081</u> 927708 24151
D. Schedule Profile To be determined.								
Project D038	P	Page 7 of 14 Pages	Pages			Exhibit R-	Exhibit R-2 (PE 0203801A)	
		2002					and the country was a factor of principles in a describe the second seco	





RDT&E PRO	PROGRAM ELEMENT		PROJECT	COST B	REAKD	BREAKDOWN (R-3)		DATE March 1006	1006	
вирбет АСТІVІТҮ 7 - Operational System Development	evelopment			PE NUMBER AND TITLE 0203801A Miss Improvement Pi	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	le/Air Defe ogram	PENUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program		PROJECT D038	8
A. Project Cost BreakdownTBDTotal			FY 1995 7726 7726	FY	<u>FY 1996</u> 2918 2918	FY 1997				
B. Budget Acquisition History and Planning Information	d Planning Inform	mation								
Organiz										· · · · · · · · · · · · · · · · · · ·
Contractor or Contract Government Method/Type Performing or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to				Dudget	<u> </u>	
velopmen	<u>Date</u> ons	EAĆ	EAC	FY 1995	FY 1995	FY 1996	FY 1997	Sugget to Complete		ı otal Program
RDEC 1095 Targets Mgt Ofc 1095	Various 3Q95			1181 2150						1181
Dev Contractors Various Miscellaneous	Various		10087	10087						10087
Contracts Various Other Govt Agen MIPR	Various Various			7774						7774
nage	izations: None			04.0	7726	2918				640 10644
Test and Evaluation Organizations: None	is: None									-
Government Furnished Property: None.	None.									
Subtotal Product Development Subtotal Support and Management				21832	7726	2918				32476
Sublotal Test and Evaluation Total Project				21832	7726	2918				32476
Project D038			Page	Page 8 of 14 Pages	Š		######################################	Evhihit D.3 (DE 0203904A)	{	

RDT&E BUDGET ITEM JUST	EM JUS	THOAT	SOL		TIFICATION SHEET (R-2 Exhibit)			DAIE	March 1996	မွှ
BUDGET ACTIVITY	er videlichten enweiger regement die kriegt	end the state of t	PEN	PE NUMBER AND TITLE	TITLE				Ы	PROJECT
7 - Operational System Development	-ನಿಜಾ		020	3801A N	0203801A Missile/Air Defense Product	r Defens	e Produc			D303
			7	provemer	mprovement Program	E				
	A PROPERTY OF THE PROPERTY OF	The state of the s	The state of the s	And Colors the September of the Colors of the September o	AND CONTRACTOR STANDS OF THE PROPERTY OF	CONTRACTOR	CANCEST CONTROL CONTRO	all uses you will be a second and the second and th		
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001		Cost to	Total Cost
COST (In Thousands)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		Complete	
D303 Stinger Product Improvement Program	4810	13662	18668	2314	2849	12439	28465	-	Continuing	Continuing Continuing
	Miles for the first of the second second second second	COMPANY OF THE COMPANY OF THE PARTY OF THE P	er de la compara	Contraction and a second second second	en die der de de la	THE RESERVE OF THE PROPERTY OF	Colorador de Company de la company de la colorador de la color	Control of the Contro		

tasks: self protection, protect force, and augmentation of air defense forces. Funding in FY 1996 and FY 1997 in this project also supports an eight nation Memorandum of Focal Plane Array Seeker which improves the performance of the missile against an expanded target and in background clutter. The program develops the improved missile for adaptation to any or all of the STINGER firing platforms, extends the missile service life and establishes a government post deployment software support posture. The externally loaded software, which is downloaded from a reprogrammable module in the gripstock. This concept allows for timely upgrades to correct system deficiencies, rapid reaction to new threats or threat countermeasures, development of specialty software programs where full capability may not be desired, and accommodation of new conducted as part of the production qualification, and platform integration. A portion of funds in FY 1997 initiate development of a MIL-STD 1760 launcher to be fielded deficiencies in countermeasures and other engagement conditions, and increases terminal accuracy. The Block II program is a development of an advanced infrared (IR) with the Apache Longbow Helicopter air-to-air requirements based on Joint Service (U.S. Air Force and U.S. Army) doctrine. The air-to-air requirement satisfies three Block II Engineering, Manufacturing, Development (EMD) program provides for development to a performance specification, design qualification of guidance section A. Mission Description and Budget Item Justification: This project provides a product evolution of the STINGER-RMP to improve countermeasures capability via Defense Systems (VSHORADS) and Short Range Air Defense Systems (SHORADS). The output of the Feasibility Study will form the basis for the development of a Understanding (MOU) signed by Office of Secretary of Defense in 1994 for the conduct of a two-year competitive Feasibility Study on NATO Very Short Range Air missions. The Block I upgrade project, which adds a roll sensor and enhanced software, extends the missile service life, solves the recognized system performance VSHORADS/SHORADS NATO Staff Requirement and information to support the development of a follow-on system to STINGER.

sensor and enhanced software. Contract management is through the Cost/Schedule Status Report (C/SSR) and Contract Funds Status Report (CFSR). Production cut-in to Acquisition Strategy: The Block I program, with a sole source CPIF contract awarded in 1992, increases the Stinger missile's performance through addition of a roll 493 missiles begins FY 96. A sole source FFP contract for the modification production program begins mid-FY 96 at the end of current missile production.

Current funding is being used to demonstrate the performance of the FPA seeker head and initiate miniaturization of the Block II electronics package through a sole source-CPIF contract with the BAA prime contractor. Contract management is through C/SSR and CFSR. These efforts reduce risks associated with the planned FY 00 start of a The Block II program began in FY 93 as a Technology Base Broad Agency Announcement (BAA) for 2.75" focal plane array (FPA) seeker technology development. sole source-CPIF contract for the Engineering, Manufacturing, and Development phase.

A CPIF contract to the prime to initiate development of the MIL-STD 1760 launcher is planned for mid-FY 1997.

Project D303

Page 9 of 14 Pages

Exhibit R-2 (PE 0203801A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	PROJECT D303
The VSHORADS/SHORADS strategy is based on the conduct of a multi-national industrial competitive procurement, which will select two or more consortia composed of industry from the MOU signature nations, to perform the short range air defense technology and system studies. The output of the Feasibility Study, the NATO weapon system acquisition process, Project Definition, as well as support the U.S. follow-on to STINGER effort. The Request for Proposal for the Feasibility Study (funded by NATO) was released to industry in January 1995. Proposals were received from two international consortia in July 1995. Award of contracts is scheduled for June 1996. The United Kingdom (UK) has been designated the Pilot Nation for the Feasibility Study, providing management office support and serving as the Contracting Authority.	a multi-national industrial competitive procurement, which will select two or more consortia composed of nge air defense technology and system studies. The output of the Feasibility Study, the NATO Staff weapon system acquisition process, Project Definition, as well as support the U.S. follow-on to STINGER of by NATO) was released to industry in January 1995. Proposals were received from two international 1996. The United Kingdom (UK) has been designated the Pilot Nation for the Feasibility Study, providing rity.	nsortia composed of e NATO Staff ow-on to STINGER two international lity Study, providing
 FY 1995 Accomplishments: 2900 Demonstrate the Performance of Broad Area Announcement (BAA) 2.75" Infrared (IR) Focal Plane Array (FPA) Seeker Head 1000 Initiate Miniaturization of the 2.75" IR FPA Electronics Package 910 Initiate Target Identification and Countermeasure Algorithms for the 2.75" IR FPA Seeker Total 4810 	(BAA) 2.75" Infrared (IR) Focal Plane Array (FPA) Seeker Head kage s for the 2.75" IR FPA Seeker	
TW 4007 IN I P		

FY 1996 Planned Program:

•	2007	2007 Conduct Testing of Block I Phase II Software
•	1019	Perform Block I Software Critical Design Review and Release Engineering Change Proposal
•	493	Initiate Block I Performance Assessment
•	4238	Perform Evaluation of Seeker In Rolling Airframe and Captive Carry Tests
•	3088	Initiate Block II Electronics State of the Art Packaging (Miniaturization) of Electronics Section
•	1433	Upgrade Block II Seeker to Correct Limitations Discovered in Initial Development
•	200	VSHORADS/SHORADS International Proposal Evaluation/Negotiations/Contract Awards
•	840	VSHORADS/SHORADS Technology and Subsystem Development
•	305	SBIR/STTR
•	039	Revised Economic Assumption not available for execution
Total	13662	

FY 1997 Planned Program:

•	707	Complete Block I Pertormance Assessment
•	2435	2435 Initiate Development of Unmanned Aerial Vehicle-Specific Software
•	531	531 Block I Flight Demonstration
•	2191	2191 Perform Evaluation of Seeker In Rolling Airframe and Captive Carry Tests

Project D303

Exhibit R-2 (PE 0203801A)

Page 10 of 14 Pages

RDT&E BUDGET ITEM JUSTIFIC	FICATION SHEET (R-2 Exhibit)		N Ex Ex Ex	4)	DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PEN 02(PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	TLE issile/Air i Program	Defense	Product	A Q	PROJECT D303
 FY 1997 Planned Program: (continued) 3898 Produce Prototype Block II Electronics State of the Art Packaging (Miniaturization) of Election 4811 Integration of Tactical-sized Block II Guidance Assembly 2202 VSHORADS/SHORADS-System Variants Development and Evaluation of System Variants 1898 Initiate Development of MIL-STD 1760 Launcher Total 18668 	of the Art Packaging (Miniaturization) of Electronics Section ce Assembly evelopment and Evaluation of System Variants icher	g (Miniaturizat	tion) of Electr em Variants	onics Secti	on		
	FY 1995 4933 4829 -19	FY 1996 4246	<u>FY 1997</u> 3766				
Appropriated Amount (F.Y. 1990) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 PB Current Budget Submit/President's Budget	4810	13800 -138 13662	14902 18668				ini kanaginini di sera mana kapura sawa sa ini ili ababi atab ata asal
 Change Summary Explanation: Funding: FY 1996: Revised Economic Assumptions (-138). FY 1997: Continued risk reduction program leading to an accelerated Block II EMD (+14902). Schedule: Adjustments to schedule have been made to incorporate Block II development program increase in FY 1996 and FY 1997. Technical: Reduction of FY 1996 Block I funding resulted in deletion of one Flight Test and delay of Government Performance Asset 1997. Technical realignment in process to optimize technology insertion for Block I and Block II programs. 	to an accelerated ate Block II de eletion of one F insertion for Bl	d Block II EM velopment pro light Test and lock I and Bloo	D (+14902). gram increase delay of Gove k II programs	e in FY 199 ernment Per 6.	6 and FY 1997. rformance Assessn	f). Jing to an accelerated Block II EMD (+14902). Superate Block II development program increase in FY 1996 and FY 1997. In deletion of one Flight Test and delay of Government Performance Assessment completion to FY logy insertion for Block I and Block II programs.	> L
C. Other Program Funding Summary FY 1995 FY 1996	996 FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total <u>Cost</u>
Missile Procurement, Army Budget Activity 2 - Stinger Budget Activity 3 - Stinger Mods (C20000) 4958 9:	9804 16903	17674	24071	26087	39082	Cont'd	1143340 Cont'd
Project D303	Page 11 o	Page 11 of 14 Pages		Control of the Control of the Control	Exhibit R-2 (Exhibit R-2 (PE 0203801A)	N. A. PANES





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION SHEET (R.	-2 Exhibit)	DATE March 1996
вир бет Асті vіт у 7 - Operational System Development	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	PROJECT D303
D. Schedule Profile	FY 199	FY 1997	
n		4 × × 1	
Project D303	Page 12 of 14 Pages	Exhil	Exhibit R-2 (PE 0203801A)
	1370		

	RDT&E PROGRAM ELEMENT/P	ZAM EL		ROJECT (SOS B	REAKDO	COST BREAKDOWN (R-3)	DATE	TE March 1996	9
вирдет АСТІVITY 7 - Operational System Development	System De	velopment			PE NUMBER ANI 0203801A Improvement	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	s/Air Defer gram	DTITLE Missile/Air Defense Product ent Program		PROJECT D303
A. Project Cost Breakdown Project Management Matrix Support Major Development Contractor Contracted Services Other Government Agencies UK MOU Contractor UK Management Office UK MOU U.S. Program Support Total	akdown Matrix Support Contractor gencies . ice am Support			181 4629 4810	-	2334 9132 50 42 643 106 291	4267 10707 52 42 1732 176 294 18668			
B. Budget Acquisition History and Planning Information	ion History and	Planning Info	rmation							
Performing Organizations Contractor or	zations Contract									andre e energi i Para Eleva de La Caración de La Ca
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to			1	Budget to	Total
Activity	Vehicle	<u>Date</u>	EAC	EAC	FY 1995	FY 1995	FY 1996	FY 1997	Complete	<u>Program</u>
Froduct Development Organizations Hughes Msl Sys SS-CPIF	SS-CPIF	Apr 92	26232	26232	18224		2382	2111	3515	26232
Hughes Msl Sys Hughes Msl Sys	SS-CPIF SS-CPIF	Apr 93 Mar96	4629 138246	4629 138246		4629	6750	7496	124000	4629 138246
Hughes Msl Sys	SS-CPIF	Apr.97		1100	2100			1100		2100
Targets Mgt Ofc	MIPR	Various			2				12280	12280
BSFV Aggregate	Various	Various			7028			Ç	2 / 7	7028
Block I Aggregate PMO/Matrix	Various Allot/1095	Various Various			8152		394 3054	52 5665	1648 49944	10246 58663
Block II Aggregate	Various	Various				181			1572	1753
Other Govt Agen	MIPR	Various					42	42	3108	3192
British Aerospace Thomson-CSF	C-FFP C-FFP	96 unf 96 unf					322 321	866 866		1188
Project D303				Pag	Page 13 of 14 Pages	ıges		Exhibit F	Exhibit R-3 (PE 0203801A)	





RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	EAKDC	WN (R-	3) DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203801A Miss Improvement P	PENUMBER AND TITLE 0203801A Missile/Air I Improvement Program	e/Air Defe gram	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	a ப	РКОЈЕСТ D303
Contractor or GovernmentContractGovernmentMethod/TypeAward orPerformingProjectPerformingor FundingObligationActivityOfficeActivityVehicleDateEACEACUK Ministry ofMOU/1095Dec 95EACDefense (MgtOfc)Support and Management OrganizationsDec 95WOU VSHORAD/ SHORADSDec 95ActivityTest and Evaluation Organizations: NoneNone	Total Prior to FY 1995	FY 1995	EY 1996 106 291	FY 1997 176 294	Budget to Complete	Total Program 282 585
Government Furnished Property: N/A						**************************************
Subtotal Product Development Subtotal Support and Management	35504	4810	13371 291	18374 294	196067	268126 585
Subtotal Test allu Evaluation Total Project	35504	4810	13662	18668	196067	268711
				•		
Project D303	Page 14 of 14 Pages	es		Exhibit R-3	Exhibit R-3 (PE 0203801A)	
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RDT&E BUDGET ITEM JUS		T C T	S NOL		TIFICATION SHEET (R-2 Exhibit)	oit)		DATE Ma	March 1996	60
BUDGET ACTIVITY 7 - Operational System Development	-		PE NU 020	PE NUMBER AND TITLE 0203802A Othe	ITLE Other Miss	sile Prod	uct Impr	TITLE OTHER MISSILE Product Improvement	more and the state of the state	
	A STATE OF THE STA		<u></u>	Programs						इन्स्ट्रेस विकास सम्बद्ध
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	62176	63709	6199	17095	21472	17090	9505		0	971674
D045 HELLFIRE Product Improvement Program	280	0	0	15853	20247	17090	9505		0	522516
D304 Army TACMS BLK IA	36337	22813	4469	0	0	0	0		0	88971
D2MT ATACMS BLK IA Oper Tests	0	3483	390	0	0	0	0		0	3873
D336 TOW Product Improvement Program	25559	27686	1340	1242	1225	0	0		0	346587
D701 Hydra 70 Program Improvement Program	0	9727	0	0	0	0	0		0	9727
	Mark Control of the C				The state of the s	The second section of the second section is a second section of the second section sec	Sold State of the State of Sta	and the second second second the second seco	And the state of the state of species of the state of the	A CONTRACTOR OF THE PARTY OF TH

information for orientation of the missile in position and azimuth. The payload quantity of M74 anti-personnel/anti-materiel (APAM) bomblets will be reduced resulting in Mission Description and Budget Item Justification: Expanding regional power threats require an evolutionary improvement program to maintain the effectiveness of the improvements. Improvements are required to maintain the infantry's capability to support the US Army mission of crisis response to regionally based threat and allows for new/evolving threats and the Improved Target Acquisition System (ITAS). The ITAS is a technology insertion program using 2nd Gen Forward Looking Infrared (FLIR) performance. These funds also supported participation by Block IA prototype missiles in the Joint Precision Strike Demonstration (JPSD). Further, these funds allow for future improvement program studies/demonstrations. Project D2MT provides for the operational testing of the Army TACMS Block IA Program. The ATACMS BLK II HELLFIRE, Army TACMS, TOW and HYDRA 70 Systems. The HELLFIRE PIP consists of the Longbow Home-on-Jam (HOJ) and Counter Active Protection System system is employable by day or night, in adverse weather, and in countermeasures environment. The HOJ and CAPS objective is to maintain the Longbow missile's low technology to upgrade the current TOW Target Acquisition and Fire Control subsystems. These projects support development of upgrades to current production vehicles (CAPS). The Longbow missile provides a fire-and-forget HELLFIRE capability, greatly increasing weapon system effectiveness and aircraft survivability. The weapon development effort will integrate Global Positioning System (GPS) technology into the guidance system of the Army TACMS Block I missile to provide more accurate vulnerability and susceptibility to existing and future battlefield jammer threats and "hard kill" Active Protection System (APS) threats. The Army TACMS Block IA a range approximately twice that of the current Block I missile. The inherent GPS accuracies will be achievable independent of range, thereby enhancing system transitioned into the BAT PE 0604768A, Project D688 in FY 95. The TOW PIP provides advances in the day/night sight improvements, fire control and missile TOW to continue to be integral to the strategic principle of forward presence. Included in this PIP are missile improvements to include a lethality effort against and are appropriately funded in this budget activity, 7.

Page 1 of 21 Pages

Exhibit R-2 (PE 0203802A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE N	March 1996	9
вир бет АСТІ VITY 7 - Operational System Development	ţ		PE NU 020 Pro	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	ritle)ther Mis :	sile Prod	uct Impr	ovemen		РРОЈЕСТ D045
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D045 HELLFIRE Product Improvement Program	280	0	0	15853	20247	17090	9505		0	522516
A. Mission Description and Budget Item Justification: Project D045 - HELLFIRE Product Improvement Program: The Longbow HELLFIRE Product improvement Program (PIP) provides for the development of Home-on-Jam (HOJ) and Counter Active Protection System (CAPS) initiatives in order to maintain the Longbow Hellfire missile's low susceptibility to existing and future battlefield jammer threats (self-protection jammers, escort jammers, and stand-off jammers) and evolving "hard kill" Active Protection Systems threats. The program will consist of defining threat systems and operational requirements; implementing and demonstrating the designs in simulations, warhead, tower Hardware-in-the-Loop and captive flight testing; and formally qualifying the designs in missile flight tests. Costs in FY 1998 - FY 2001 in the amount of 62695 is for Longbow HELLFIRE product improvements only.	ation: Proj opment of Ho isting and fut ats. The pro re-in-the-Loc	ect D045 - Forme-on-Jam ure battlefie gram will co p and captiv	(HOJ) and (HOJ) and (Jammer thansist of define e flight testivements only	Product Im Counter Acti nreats (self-p ning threat s, ng; and form	provement I ve Protection rotection jan ystems and o sally qualifyi	Program: System (C/ Imers, escort perational re ng the desig	The Longbo APS) initiati I jammers, a equirements ns in missile	The Longbow HELLFIRE Product APS) initiatives in order to maintaint jammers, and stand-off jammers) equirements; implementing and dergns in missile flight tests. Costs in F	E Product to maintain t fjammers) at ing and deme Costs in FY	he d nstrating 1998 -
Acquisition Strategy: Development for the HOJ and CAPS initiatives will be done by Missile Command labs and contract development by the Longbow Limited Liability Company (sole-source).	nd CAPS ini	iatives will	be done by I	Missile Com	mand labs an	ıd contract d	evelopment	by the Long	gbow Limitec	Liability
 FY 1995 Accomplishments: 280 Funds appropriated for testing in support of Counter Active Protection System (CAPS) for Laser HELLFIRE II Total 280 	upport of Cou	ınter Active	Protection S	iystem (CAP	S) for Laser	HELLFIRE	ш			
FY 1996 Planned Program: No planned program.										
FY 1997 Planned Program: No planned program.										
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since		FY 1995 3945 3862 -3582		FY 1996	FY 1997					
F F 1990 Fresident's Budget Submit		280	0							
Project D045			Page 2 of 21 Pages	21 Pages			Exhib	it R-2 (PE (Exhibit R-2 (PE 0203802A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		Esp	CAT	S S S		-2 Exhit)it)		DATE March 1996	966
вирсет Астіvіту 7 - Operational System Development	7		a solica de la contra del la contra	PE NUI 0203 Proc	PE NUMBER AND TITLE 0203802A Othe Programs	ITLE ther Miss	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	uct Impr	ovement	PROJECT D045
Change Summary Explanation (Funding): FY 1995. Below threshold reprogramming (-3582).)5: Below	threshole	i reprogra	mming (-35	.82).					
C. Other Program Funding Summary	FY 1995		FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
Missile Frocurement Arniy C70300 Longbow HELLFIRE C70100 Laser HELLFIRE	41	41195 86330	188714 50740	249521 108069	268430 93000	336513 99000	290778 103000	290388 110000	492411	2157950 2458629
D. Schedule Profile	FY	FY 1995	-	FY	FY 1996	-	FY 1997	Ľ. c		
Main Warhead Qual for HELLFIRE II X* Main Warhead Hardware Delivery for X* HELLFIRE II		n	1	7	n	1	4			
* Milestone completed.										
Project D045				Page 3 of 21 Pages	'I Pages			Exhibi	Exhibit R-2 (PE 0203802A)	2A)
				1394						





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT (SOST BE	REAKDO	WN (R-	<u>@</u>	DATE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE A Other IS	Missile Pı	ਹ ਸ਼ਾਸ਼ੁਰ Other Missile Product Improvement	rovement	PROJECT D045	ЕСТ 5
A. <u>Project Cost Breakdown</u> Support of long standoff warhead technology development for HELLFIRE II Total	FY 1995 280 280	FY 1996	966	FY 1997				
B. Budget Acquisition History and Planning Information								<u></u>
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Descriptions	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 199 <u>5</u>	FY 1996	FY 1997	Budget to Complete		Total Program
Prior yr contracts Conventional SS/CPIF Mar 93 Munitions Sys		364336 1132						364336 1132
Tampa, FL AGMS Proj Ofc -		2000	280					2280
Warnead 1ecn Div Program Mgmt		91289						91289
Support Longbow HF PIP						62	62695	62695
Support and Management Organizations: None Test and Evaluation Organizations Misc		784						784
Government Furnished Property: None Subtotal Product Development		458757	280			62	; 56929	521732
Subtotal Support and Ivanagement Subtotal Test and Evaluation Total Project		784 459541	280			62	; 56929	784 522516
Project D045	Pag	Page 4 of 21 Pages	2S		Exhib	Exhibit R-3 (PE 0203802A))2A)	
		1000						

AND	RDT&E BUDGET ITEM JUST		FICA	S S S S S S S S S S		IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	9
вирсет Астіvіту 7 - Operatioi	DGET АСТІVITY - Operational System Development	The Commence of the Commence o		PE NL 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	PENUMBER AND TITLE O203802A Other Missile Product Improvement Programs	sile Proc	uct Impr	ovement	A CONTRACT OF THE CONTRACT OF	РRОЈЕСТ D30 4
	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D304 Army TAC	Army TACMS BLK IA	36337	22813	4469	0	0	0	0		0	88971
A. Mission Desintegrate Global of the missile in twice that of the supported partic (EMD) programmenemy surfacedadvancements, 1	A. Mission Description and Budget Item Justification: PROJECT D304 - ARMY TACMS BLOCK IA: The Army TACMS Block IA development effort will integrate Global Positioning System (GPS) technology into the guidance system of the Army TACMS Block I missile to provide more accurate information for orientation of the missile in position and azimuth. The payload quantity of M74 anti-personnel/anti-materiel (APAM) bomblets will be reduced resulting in a range approximately twice that of the current Block I missile. The inherent GPS accuracies will be achievable independent of range, thereby enhancing system performance. Funds also supported participation by Block IA prototype missiles in the Joint Precision Strike Demonstration (JPSD). The Block IA Engineering and Manufacturing Development (EMD) program will incorporate the improved APAM warhead capability. The improved missile will destroy high value targets and be especially suited for destroying enemy surface-to-surface missile system launchers. Further, these funds will allow for future improvement program studies/demonstrations pertaining to technology advancements, payload variants, propulsion, guidance and control, and fire control improvements.	fication: PRO ology into the gad quantity of lerent GPS accusissiles in the Joi PAM warhead is. Further, the lance and contributed contributed in the Joi of the Joi	JECT D304 uidance syst M74 anti-peracies will but Precision capability. The funds will but and funds will but and funds will see funds will see funds will see funds will see funds will and funds will and funds will see fund see funds will see fun	CT D304 - ARMY TACMS B dance system of the Army TAC 4 anti-personnel/anti-materiel (sies will be achievable independersion Strike Demonstration ability. The improved missile funds will allow for future impiand fire control improvements.	ACMS BLA rmy TACM materiel (A); independer onstration (J) d missile wi trure improv	OCK IA: T S Block I mi PAM) bomb It of range, tl PSD). The I Il destroy hig ement progr	he Army TA issile to prov lets will be r hereby enhai Block IA En gh value targ	CMS Block ide more acceduced resulting system cling system gineering an ets and be eremonstration	IA developi curate inforn ting in a ran performanc d Manufact specially sui ns pertaining	nation for or nation for or ige approxim se. Funds als uring Develo tied for destra g to technolo	ill entation ately o pment yying
Acquisition Stuby reducing the was awarded to	Acquisition Strategy: The Army TACMS Block IA program develops an extended range version of the currently fielded Army TACMS Block I missile. This is achieved by reducing the bomblet payload and adding the Global Positioning System into the guidance to maintain system accuracy. A sole source thirty-six month EMD contract was awarded to Loral Vought. Low Rate Initial Production (LRIP) begins in FY 1996.	c IA program d Global Position Production (LR	evelops an e ing System i (P) begins in	xtended rang into the guid FY 1996.	ge version o lance to maii	f the current ntain system	ly fielded Ar accuracy. A	my TACMS sole source	Block I mis thirty-six n	ssile. This is nonth EMD o	achieved ontract
FY 1995 Accomplishments:	complishments: 1910 GPS Integration/interface Preliminary Support. 4473 Begin Block IA lab, static, warhead vibration, and road tests. 29613 Block IA EMD (second increment). 341 Studies, development, and validation of future improvement programs.	reliminary Sup warhead vibrat rement). validation of fu	port. ion, and roae ture improv	d tests. ement progr	ams.						g CLI Mass and an angular special state of the spec
96 Pla	 13487 Block IA EMD (third increment). 8316 Initiate and complete Production Prove-Out Test (PPT), Pre-production vibration and road tests. 442 Studies, development, and validation of future improvement programs. 64 Revised Economic Assumption not available for execution. 504 SBIR/STTR decrements. 	ement). action Prove-O validation of fi otion not availa), Pre-produ ement progr. ition	ction Qualif ams.	cations Test	i (PPQT) and	support Op	erational Te	Test (PPT), Pre-production Qualifications Test (PPQT) and support Operational Test (OT), continue re improvement programs.	inue
Total 22 Project D304	2.2813 4			Page 5 of 21 Pages	21 Pages			Exhib	Exhibit R-2 (PE 0203802A)	0203802A)	





RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	2-2 Exhibit		DATE	March 1996	9
вир бет АСТІ VITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	TITLE Other Missile	e Produ	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs		РRОЈЕСТ D304
 FY 1997 Planned Program: 3123 Block IA EMD (fourth increment). 1246 Complete testing activities, data analysis and reporting. 100 Studies, development, and validation of future improvement programs. Total 4469	t programs.					
nary et (FY 1996) 3 7 1995) 3	FY 1996 23454	FY 1997 4583				
Adjustment to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since	23044	-114				
FY 1996 President's Budget Current President's Budget Submit	22813	4469				
Change Summary Explanation: Funding: FY 1995 - Below threshold reprogramming (-167) FY 1996 - Adjustment due to Revised Economic Assumptions/Improved Management Savings (-231). FY 1997 - Adjustment due to Revised Economic Assumptions/Improved Management Savings (-114).	^I Improved Manager ^I Improved Manager	nent Savings (-2 nent Savings (-1	31). 14).			
C. Other Program Funding Summary FY 1995 FY 1996 FY	FY 1997 FY 1998	FY 1999 F	FY 2000	FY 2001	To <u>Complete</u>	Total <u>Cost</u>
Missile Procurement, Army C98510 ATACMS 112824 121303	92816 97097	103400	100573	112384	136489	1789520
Project D304	Page 6 of 21 Pages			Exhibit R-2 (F	Exhibit R-2 (PE 0203802A)	

RDT&E BUDGET ITEM JUSTIFICATION	IFICATION SHEET (R-2 Exhibit)	Exhibit) DATE	TE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Other Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	PROJECT D304
Y 1995		Y 1997	
JPSD Contract Award Block IA Milestone IV Begin PPT Complete PPT Block IA LRIP Decision Begin PPQT Complete PPQT Begin Operational Testing Complete Operational Testing Complete Operational Testing Complete Block IA EMD Block IA Milestone III Decision	2	- × × × · · · · · · · · · · · · · · · ·	
Project D304	Page 7 of 21 Pages	Exhibit R	Exhibit R-2 (PE 0203802A)
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RDT&E PROGRAM ELEMENT/P	/PROJECT C	COST BREAKDOWN (R.3)	a) NMOC	3	DATE	
BUDGET ACTIVITY 7 - Operational System Development	-	PE NUMBER AND TITLE 0203802A Other Missilo Broding Inc.	E Missile I		March 1996	96 PROJECT
		Programs		Tounct Imp	rovement	D304
A. <u>Project Cost Breakdown</u> Contractor Engineering Support Developmental Test & Evaluation Project Management Support Project Management Personnel Total	FY 1995 28083 4473 1883 1898 36337	EY 1996 10100 8316 1824 2573 22813	FY 1997 2400 1246 291 532 4469			
B. Budget Acquisition History and Planning Information						
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office I EAC E	Total Prior to FY 1995 FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Loral Vought Sys SS/CPIF Nov 93 8041 Loral Vought Sys SS/CPIF Mar 94 52850 In-House Spt Support and Management Organizations	8041 52850	6548 1493 13760 26590 989 1542	10100	2400		8041 52850 4104
Sys Eng & 1ech Asst Contracts and Program Mgt In-House Spt Test and Evaluation Organizations: None		542 341 1721 1898	442 2573	100		1425
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property: None Support and Management Property: None	P	Total Prior to FY 1995 FY 1995	FY 1996	FY 1997	Budget to <u>Complete</u>	Total Program
Project D304	Page 8 o	Page 8 of 21 Pages		Exhibi	Exhibit R-3 (PE 0203802A)	

1389

DDT&E DROGRAM ELEMENT/PRO.	ROJECT COST BREAKDOWN (R-3)	FAKDO	WN (R-3		DATE	March 1996	E CONTRACTOR DE LA CONT
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE A Other I S	Missile Pr	ЭТІТІЕ Other Missile Product Improvement	ovement	PR(РКОЈЕСТ D304
Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date	Total Prior to <u>FY 1995</u>	FY 1995	FY 1996	FY 1997	Budg Com	Budget to Complete	Total <u>Program</u>
uation Property MIPR	1220	3270	5472	100			10062
Missile Range (WSMR) Range Support MIPR Redstone MIPR	131 50	100	1036 500	796			1963
Technical Test Center (RTTC) Army, Research MIPR		374	629	282			1335
T)	391	729	629	18			1767
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	21297 2263 1792 25352	29625 2239 4473 36337	11482 3015 8316 22813	2591 632 1246 4469			64995 8149 15827 88971
Project D304	Page 9 of 21 Pages	nges		Exh	Exhibit R-3 (PE 0203802A)	3802A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	≀-2 Exhi	bit)		DATE M	March 1996	9
вирсет Астіуітү 7 - Operational System Development	.		PE NI 020 Pro	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	тп.е Other Mis	sile Proc	luct Impr	ovement		PROJECT D2MT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D2MT ATACMS BLK IA Oper Tests	0	3483	390	0	0	0	0		0	3873

A. Mission Description and Budget Item Justification: PROJECT D2MT ATACMS BLOCK 1A Operational Tests: This project finances the direct costs of planning production decisions. Operational Testing is conducted under conditions similar to those encountered in actual combat with typical user troops trained to employ the system. and conducting operational testing and evaluation of the Army Tactical Missile System Block IA system by the Operational Test and Evaluation Command (OPTEC). The Army TACMS is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation (IOTE) in FY 96 in support of Milestone III full OPTEC provides the Army leadership with independent test and evaluation of system effectiveness and suitability.

Acquisition Strategy: Not applicable.

FY 1995 Accomplishments: Project not funded in FY 95.

FY 1996 Planned Program:

- Conduct Army TACMS Block IA operational testing. 3397
- Revised Economic Assumption not available for execution
 - SBIR/STTR

3483

FY 1997 Planned Program:

- 390 Complete Army TACMS Block IA operational testing.390
 - Total

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Project D2MT

Exhibit R-2 (PE 0203802A)

RDT&E BUDGET ITEM JUSTIFICAT	FICATION SHEET (R-2 Exhibit)	R-2 Exhibit) DATE	TE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	D TITLE Other Missile Product Improvement	PROJECT D2MT
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	FY 1996 3582 3519 -36	FY 1997 398 -8	
 Change Summary Explanation: Funding: FY 1996 - Revised Economic Assumption (-36). FY 1997 - Revised Economic Assumptions/Improved Management Savings (-8) C. Other Program Funding Summary: There are no other related RDTE or other Appropriation efforts. 	agement Savings (-8)	efforts.	
D. Schedule Profile 1 2 3 Begin Army TACMS Block IA Operational Testing Complete Army TACMS Block IA Operational Testing	FY 1996 1 2 3 X	FY 1997 4 1 2 3 4 X	
Project D2MT	Page 11 of 21 Pages	Exhibit R	Exhibit R-2 (PE 0203802A)





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COST BRE	AKDOWN (F		DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	Product Impr	ovement	PROJECT D2MT
 A. Project Cost Breakdown Operational Testing Total 	FY 1995 FY 1996 3483 3483	96 FY 1997 13 390 13 390			
B. Budget Acquisition History and Planning Information: None					
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property: None Support and Management Property: None	Total Prior to <u>FY 1995</u> E	FY 1995 FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Property Misc		3483	390		3873
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		3483	390		3873
Project D2MT	Page 12 of 21 Pages		Exhibi	Exhibit R-3 (PE 0203802A)	

RDT& UDGET ITEM JUST		S L	SZO		IIFICATION SHEET (R-2 Exhibit)	40		DAIE	March 1996	ဟ
BUDGET ACTIVITY 7 - Operational System Development		er en contrete de constante de mandales de la constante de la constante de la constante de la constante de la c	PE NI 020	PE NUMBER AND TITLE 0203802A Othe	E NUMBER AND TITLE 0203802A Other Missile Product Improvement	sile Prod	uct Impr	ovement		PROJECT D336
			Pro	Programs						
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D336 TOW Product Improvement Program	25559	27686	1340	1242	1225	0	0		0	346587

improvements to the TOW missile system. Improvements are required to maintain the Infantry's capability to support the US Army mission of crisis response to regionally allowing the Army to own the night and providing compatibility with the TOW next generation missile. The ITAS design provides simple growth potential for digitization aerodynamics, guidance, control, reduced missile time of flight), and Improved Target Acquisition System (ITAS). The ITAS will provide improved target detection and based threats and allow TOW to continue to be integral to the strategic principle of forward presence. Included in this PIP are missile improvements (seeker, lethality, acquisition range, improved probability of hit and enhanced fire control capabilities that will upgrade the anti-armor capability of light forces using the TOW system, A. Mission Description and Budget Item Justification: PROJECT D336 TOW Product Improvement Program: Provides for continued development of applications.

The Low Rate Initial Production (LRIP) contract will be awarded sole source to the EMD contractor on a fixed price incentive fee (FPIF) basis. Full Rate Production (FRP) subsystems. The ITAS EMD contract effort was competitively awarded to prime contractor Texas Instruments on a cost plus incentive fee/award fee (CPIF/AF) contract. Acquisition Strategy: The ITAS is a technology insertion program utilizing 2nd Gen FLIR technology to upgrade the current TOW Target Acquisition and Fire Control contracts will be awarded on a firm fixed price (FFP) basis and may be awarded through competition or sole source solicitation depending on the total quantities.

FY 1995 Accomplishments:

- 4704 Continued ITAS EMD.
- Completed ITAS PPT. 3734
- Delivered prototypes for initial system level test.
- Procured prototypes for Pre Production Qualification Tests (PPQT).
- Procured prototypes for Initial Operational Test and Evaluation (IOTE). 2879
 - Continued ITS. 2779
- Completed the Limited User Test (LUT). 493
- Initiated ITAS software testing. 2910
- Initiated pilot line. 3555
- Continued missile enhancement efforts against the evolving threat.

Project D336

1394

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Exhibit R-2 (PE 0203802A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
вирсет Астипт 7 - Operational	в∪рдет Асті∨ітץ 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	PROJECT SVement D336
FY 1996 Planned Program:	rogram: Continue ITAS EMD. Complete 1TS. Complete pilot line. Conduct LRIP Review. Deliver prototypes for PPQT. Conduct PPQT. Support IOTE. Support IOTE. Continue missile enhancement efforts against the evolving threat. Revised Economic Assumption not available for execution SBIR/STTR decrements Revised Economic Assumption not available for execution SBIR/STTR decrements Revised IOTE reports and complete Milestone III. Continue missile enhancement efforts against the evolving threat (Counter Active Protection System (CAPS)). Develop analytical model Design/test long stand-off warhead Design/test long stand-off sensor study Redesign armament section	hreat.	
Project D336	Page	Page 14 of 21 Pages	Exhibit R-2 (PE 0203802A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFIC	NOLA	H H S	(R-2 Exhit	oit)	DATE	March 1996	96
вирсет Астіміту 7 - Operational System Development			PE NUMBER AND TITLE 0203802A Othe Programs	ND TITLE Other Miss	sile Produ	Other Missile Product Improvement		PROJECT D336
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Adjustment to FY 1996 Adjustment to FY 1996	FY 26	<u>7 1995</u> 26138 25596 -37	FY 1996 30913 27965 -279	<u>FY 1997</u> 1367				
FY 1996 President's Budget Current President's Budget Submit	2,	25559	27686	-27 1340				
Change Summary Explanation: Funding: FY 1995 Below threshold reprogramming (-37). FY 1996 Revised Economic Assumption (-279). FY 1997 Revised Economic Assumption (-27).	umming (-37). nption (-279). nption (-27).							
C. Other Program Funding Summary	FY 1995 FY 1996	9 <u>6</u> FY 1997	97 FY 1998	98 FY 1999	FY 2000	FY 2001	To Complete	Total <u>Cost</u>
Missile Procurement, Army C61700 TOW Mods	32394	94	16 79458	58 63673	60973	9100	239600	990179
D. Schedule Profile	FY 1995 2 3 4	,	FY 1996 2 3	4	FY 1997 2 3)7 3 4		
Initiated ITAS Pilot Line Completed ITAS PPT Part 2 Completed ITAS LUT Initiate ITAS PPQT LRIP Decision IOT&E ITAS Milestone III Review Initiate ITAS PQT * Milestone Completed	* * *	*	*	××	×	×		
Project D336		Page I	Page 15 of 21 Pages	2.5	en e	Exhibit R-2 (Exhibit R-2 (PE 0203802A)	

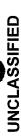




RDT	RDT&E PROGRAM ELEMENT/	RAM ELI		PROJECT (COST BI	REAKDO	COST BREAKDOWN (R-3)		DATE March 1996	1996
вироет АстіvітY 7 - Operational System Development	System De	velopmen			PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE !A Other ns	Missile Pı	ס זוזור Other Missile Product Improvement	ovement	PROJECT D336
A. Project Cost Breakdown Primary Hardware Development Program Management Support Developmental Test and Evaluation Training Development Total	akdown evelopment tt Support and Evaluation at			EY 1995 13474 4490 4816 2779 25559		FY 1996 13583 4436 7812 1855 27686	FY 1997 763 298 279 1340			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Vehicle Date E.	on History and sations Contract Method/Type or Funding Vehicle	Planning Info	prmation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY_1997	Budget to <u>Complete</u>	t to Total ete <u>Program</u>
PY Sunk Cost Texas Instruments, C/CPIF/AF	C/CPIF/AF	Apr 93	54403	55908	145427 36043	13383	13333			145427 62759
STRICOM, Orlando, FL	MIPR	Sep 93			4496	2779	1855	263	<u>-</u>	9130
Support and Management Organizations PY Sunk Cost PM CCAWS, RSA PO MICOM, RSA, AL PO Misc TBD	tenent Organiz PO PO TBD	ations			46912 989 7107 659	660 3247 583	699 3308 429	151		4 1
Test and Evaluation Organizations TECOM, APG, MD PO TEXCOM, Ft MIPR	Organizations PO MIPR				42221	4376	5051 2000	279	(1	42221 266 14586 2000
Misc	TBD				716	440	761			1917
Project D336				Page	Page 16 of 21 Pages	ges		Exhibi	Exhibit R-3 (PE 0203802A)	2A)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST	RAKDO	WN (R.	3)	DATE Marc	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE A Other IS	Missile PI	Other Missile Product Improvement	rovement	PROJECT D336	ECT 16
Government Furnished Property: None.	anstance Chromosophic Commission of the Commissi		and desired by the control of the co	ANA KANA MARANA MARANA MANANA MAN	ALLEN DE L'ARREST MAN CONTRACT DE L'ARREST	A CONTRACTOR OF THE CONTRACTOR	
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to <u>FY 1995</u> 186317 55667 47551	FY 1995 16253 4490 4816 25559	FY 1996 15438 4436 7812 27686	FY 1997 763 298 279 1340	Bud	Budget to <u>Complete</u> 1532 669 266 2467	Total 220303 65560 60724 346587
Project D336	Page 17 of 21 Pages	ges		Exhi	Exhibit R-3 (PE 0203802A)	3802A)	
	1398						





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	IS NOIL	HEET (R	k-2 Exhil	bit)		NA IE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE N 020 Pro	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	^{गπ∟E} Other Mis	sile Proc	luct Impr	ovement		РRОЈЕСТ D701
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D701 Hydra 70 Program Improvement Program	0	9727	0	0	0	0	0		0	9727

A. Mission Description and Budget Item Justification: The Hydra-70 product improvement program (PIP) will qualify a non-developmental item (NDI) 2.75-inch rocket motor with composite propellant to the Hydra-70 performance baseline on the Apache helicopter. The composite propellant is intended to result in improvements over the current insensitive munitions (IM) performance levels of the MK66 rocket motor and will open the market base for the 2.75-inch rocket.

Acquisition Strategy: The project office will manage the qualification effort in accordance with Congressional direction.

FY 1995 Accomplishments: No FY 95 program

FY 1996 Planned Program:

_			
	•	1560	Engineering support
	•	066	Phase I qualification
	•	6933	Phase II qualification
	•	217	Funds will be used for SBIR/STTR programs IAW the Small Business Innovation Research Program
	•	27	Revised economic assumption- not available for execution
	Total	9727	

Reauthorization Act of 1992

FY 1997 Planned Program: No FY 97 planned program

B. Project Change Summary	FY 1995	FY 1996	FY 1997	
Previous President's Budget (FY 1996)	0	0	0	
Appropriated Amount (FY 1995)	0			
Adjustment to FY 1995				
Appropriated Amount (FY 1996)	0	9825		
Adjustment to FY 1996		86-		
Adjustments to Budget Year (FY 1997) since			0	
FY 1996 President's Budget				
Current President's Budget submit	0	9727	0	
Project D701	Page	Page 18 of 21 Pages		Exhibit R-2 (PE 0203802A)

RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit) DATE March 1996	
вирсет АстіVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement D701 Programs	PROJECT D701
Change Summary Explanation: Funding: Revised Economic Assumption (-98).		
C. Other Program Funding Summary: Not applicable.		
D. Schedule Profile	FY 1996 FY 1997	nadalah di menangga menangg
Project D701	Page 19 of 21 Pages Exhibit R-2 (PE 0203802A)	
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RDT&E PROGRAM ELEMENT/	IT/PROJECT	T COST	COST BREAKDOWN (R-3)	WN (R-		DATE March 1996	966
вир бет Асті VITY 7 - Operational System Development		PE NUMBER AN 0203802A Programs	PE NUMBER AND TITLE 0203802A Other Programs	Missile Pı	PENUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	vement	Р R ОЈЕСТ D701
 A. Project Cost Breakdown Project management support Engineering support Test support Rocket motor procurement Hydra-70 asset procurement Total B. Budget Acquisition History and Planning Information 		FY 1995 0 0 0 0 0 0	EY 1996 554 1250 4003 2920 1000 9727	EY 1997 0 0 0 0 0 0			
Award or Perfor Obligation Ac <u>Date</u>	forming Project Activity Office <u>EAC</u> EAC	ct Total se Prior to C FY-1995	FY 1995	FY 1996	FY 1997	Budget to Complete	o Total e <u>Program</u>
Product Development Organizations To be determined TBD Support and Management Organizations Industrial		0 0	0 0	2920	0 0		2920
Operations Cmd Naval Surface		0	0	475	0		0 475
warfare Cntr ARDEC: Picatinny ATCOM MICOM Edrewood		0000	0000	240 325 150 60	0000		0 240 0 325 0 150 0 60
TBD TBD				1000	0 I		0001
Project D701		Page 20 of 21 Pages	ages		Exhibit	Exhibit R-3 (PE 0203802A)	A)

ROTE	iii PROG	RAN	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OMECT	COSTB	REAKDO	WN (R-	3)	DATE	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	ystem De	velopmen		The control of the co	PE NUMBER AND TITLE 0203802A Othe Programs	RAND TITLE 2A Other ns	Missile Pr	DTITLE Other Missile Product Improvement	rovement	PR	PROJECT D701
Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date Test and Evaluation Organizations NAWC/WD, China Lake IHD/NSWC YPG ARL, APG DD/NSWC NAWC/AD, Patuxtent River MICOM Government Furnished Property: Not applicable Subtotal Product Development Subtotal Support and Management	Contract Method/Type or Funding Vehicle Organizations ed Property: ed Property:	Award or Obligation <u>Date</u> Not applicable	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995 0 0 0 0 0 Total Prior to FY 1995	FY 1995 0 0 0 0 0 0 0 FY 1995	FY 1996 318 590 2400 420 150 75 FY 1996 2920 2804	FY 1997 0 0 0 0 0 0 FY 1997	Buc Cor	Budget to Complete 0 0 0 0 0 0 0 Budget to Complete	Total Program 318 590 2400 420 150 75 75 70 Total Program 2920 2920
Subtotal Test and Evaluation Total Project Project D701	uation			Pag	Page 21 of 21 Pages	ક્ષ્ક	9727	Exhi	Exhibit R-3 (PE 0203802A)	3802A)	9727





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	HEET (R	-2 Exhil	bit)		DATE N	March 1996	6
BUDGET ACTIVITY 7 - Operational System Development	+		PE NI 020 Pro	0208010A Joint Tac Program (TRI-TAC)	התוב oint Tact RI-TAC)	tical Com	PENUMBER AND TITLE 0208010A Joint Tactical Communications Program (TRI-TAC)	ons	d I	РRОЈЕСТ D107
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D107 Echelons Above Corps (EAC) Comm	18803	12972	18693	9409	10420	6409	0	0	0	108324

support for an IOT&E, and initiation of Nodal Management, Automatic Network Management and work efforts for follow-on software releases. This program element also A. Mission Description and Budget Item Justification: A requirement exists to automate Signal unit's capability to manage multiple tactical communications systems in assisted configuration and management of a dynamic battlefield. ISYSCON is being developed in an evolutionary manner with incremental software releases. A change to system for joint task force use. The Battlefield Spectrum Management (BSM) software has been designated as part of the migration system for DOD use. The work efforts Budget Activity 7 since it is in support of a development acquisition program, still in engineering and manufacturing development but has received approval for production. supports any development required for PM, Joint Tactical Area Communications System (JTACS) Area Common User Systems (ACUS). This program is assigned to in FY 1995 - FY 1998 support the development of the first three software releases (P0, IOT&E & P2), the fabrication of Low Rate Initial Production (LRIP) prototype, the requirements document has added planning and management of satellite resources as a requirement. The ISYSCON has been selected as the network management support of battlefield operations. The Integrated System Control (ISYSCON) facility will provide automated, integrated management of the tactical communications network, establish an interface with each technical control facility in the Army Tactical Command and Control System (ATCCS) architecture, and enable automation

Acquisition Strategy: The acquisition strategy for the development phase was to competitively award an Engineering Manufacturing Development phase contract (awarded SEP 92) leading to a production contract in FY 97. Approval granted 8 May 1995 to enter into a Low Rate Initial Production (LRIP).

FY 1995 Accomplishments:

•	2850	Complete Software Requirements Specifications (SRS) and conduct Preliminary Design Review (PDR) for P0 Baseline
•	2500	Deliver draft SRS and conduct Software Specifications Review (SSR) for Phase 2 (P2) Baseline
•	200	Complete PDR for hardware prototype
•	5995	Complete Detail Design and conduct Critical Design Review (CDR) for Baseline
•	4990	Code, unit test, release Software Baseline
•	2600	Complete BSM Software Version 3.0
Total	18803	

FY 1996 Planned Program:

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2616 Complete Detail Design and conduct Developmental Progress Review

2616 Complete Detail Design and conduct Developmental Progress Review (DPR)	Page 1 of 4 Pages
2616 Co	07
	ect D107

Project D107

1403

Exhibit R-2 (PE 0208010A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION		R-2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational	вирдет Астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	PE NUMBER AND TITLE 0208010A Joint Tactical Communications Program (TRI-TAC)	nications	PROJECT D107
FY 1996 Planned P 2616 600 784 784 784 789 799 70tal 12972	1996 Planned Program: (continued) 2616 Complete Systems of IOT&E Software Baseline 600 Complete BSM Version 4.0 3662 Code, unit test, and system test of the IOT&E Software Baseline 584 Deliver draft training materiel 500 CDR for hardware prototypes 500 Develop and deliver draft tech pubs 289 Small Business Innovative Research (SBIR)(269)/SB Tech Transfer Prog (STTR)(20) 36 Revised economic assumption - not available for execution al 12972	ne : Software Basel :69)/SB Tech Tr for execution	line ansfer Prog (ST	TTR)(20)		
FY 1997 Planned Program:	spt for Software Baseline (& follow Systems Design for Phase 2 (P2) Baste Systems Design for P2 Baseline at detailed design and conduct DPR mit test, system test for P2 Baseline systems design of P3 Specifications for P2 Baseline	up actions) eline for P2 Baseline or P2 Baseline				
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) FY 1996 President's Budget Current President's Budget Submit	B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount Adjustments to FY 1995 Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	FY 1995 19206 18803 0 18803	FY 1996 13368 0 0 13104 -132 12972	FY 1997 15232 0 0 0 +3461 18693		
Project D107		Page	Page 2 of 4 Pages		Exhibit R-2 (PE 0208010A)	.0208010A)
			1404		A 15	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R	-2 Exhib	it)	DATE March 1996	96
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	ाग∟E oint Tacti ≀I-TAC)	PE NUMBER AND TITLE 0208010A Joint Tactical Communications Program (TRI-TAC)		Р R ОЈЕСТ D107
Change Summary Explanation Funding: FY 1996: (-132) the portion of this program that has been proposed for rescission. FY 1997: (+3970) plus up required to satisfy costs associated with schedule delays on the prime software contract which resulted from protests under the original competitive contract. (-509) revised inflation rates.	that has been proposed for rescissio costs associated with schedule dela (-509) revised inflation rates.	n. ys on the prii	me software contract w	hich resulted from prot	ests under
C. Other Program Funding Summary FY 1995 FY 1996 F Other Procurement, Army-2, BX0007 0	FY 1997 FY 1998 9822 11321	FY 1999 11240	FY 2000 FY 2001 4678 0	To Comp Total Cost 49827	st 7
D. Schedule Profile FY 1995 1 2 3 4 1	FY 1996	4	FY 1997 2 3 4		
PO Software PDR CDR IOT&E Software DPR IOT&E PPR FOTRE PASSOftware DPR FOTRE PASSOftware DPR FOTRE FOTRE *Milestone Completed	× *	×	× ×		
Project D107	Page 3 of 4 Pages		Exhib	Exhibit R-2 (PE 0208010A)	
	1405				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT CO	ST BREAKE	30WN (R-3)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational System Development	H O C	PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	Σ πτε Joint Tactical Communications [RI-TAC)	unications	PROJECT D107
Project Cost Breakdown tware Development (Contractor) grated Log Spt intractor Engr Spt vernment Engr Spt gram Mgt Spt iIR/STTR vised economic assumption - not available for execution al	FY 1995 16105 92 466 1873 267 18803	FY 1996 10784 0 567 1000 296 289 36 12972	FY 1997 16480 0 544 1359 310		
B. Buager Acquisition ristory and Flanning Intormation - Not app	ot applicable.				
Project D107	Page 4	Page 4 of 4 Pages		Exhibit R-3 (P	Exhibit R-3 (PE 0208010A)
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	CNCL	FIFED			



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	≀-2 Exhi	bit)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t		PE NI 020	PE NUMBER AND TITLE 0208053A Joint	тіт <u>г</u> Joint Tac	PE NUMBER AND TITLE 0208053A Joint Tactical Ground System (TIARA)	und Syst	tem (TIAF		PROJECT M635
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
M635 Joint Tactical Ground Station-P3I (TIARA)	0	0	2124	3192	0	0	0		0	5316
A. Mission Description and Budget Item Justification: This Program Element (PE) supports development of critical improvements to the Joint Tactical Ground Station (JTAGS) program. JTAGS was designed as a quick response non-developmental item (NDI) acquisition to satisfy critical in-theater deficiencies in Tactical Ballistic Missile (TBM) warning and cueing. JTAGS is designated the in-theater element of the United States Space Command's (USSPACECOM) Theater Event System (TES). The objectives of the JTAGS critical improvements program are to keep pace with modernization of the Department of Defense (DoD) Defense Support Program (DSP) satellites into the evolving Space Based Infrared System (SBIRS), to retain timely dissemination of TBM launch data sensor technology advances and to increase the accuracy and timeliness of TBM warning and cueing.	ation: This I c response no he in-theater gram are to ko IRS), to retaii	Program Ele n-developm element of t sep pace wit a timely diss	ment (PE) suental item (Pe) he United St he Moderniza he moderniza emination o	upports deve IDI) acquisit ates Space C tion of the E f TBM launc	lopment of cion to satisfy command's (oppartment or data sensc	ritical impro y critical in-t USSPACEC f Defense (D r technology	vements to heater defic OM) Theat oD) Defens advances a	the Joint Tai iencies in Ta er Event Sys se Support P ind to increa	rogram Element (PE) supports development of critical improvements to the Joint Tactical Ground Statio-developmental item (NDI) acquisition to satisfy critical in-theater deficiencies in Tactical Ballistic Miss lement of the United States Space Command's (USSPACECOM) Theater Event System (TES). The space with modernization of the Department of Defense (DoD) Defense Support Program (DSP) satell timely dissemination of TBM launch data sensor technology advances and to increase the accuracy and	ic Missile The) satellites
Acquisition Strategy: Critical JTAGS improvements under this PE will be developed making maximum use of NDI elements. After selection and assembly, the modification design will be subjected to thorough integration and performance testing to assure suitability for procurement. Once approved for procurement, an upgrade package will be procured for each of the 5 tactical units. Upgrades will be accomplished on site. These projects support development of upgrades to current production modifications and is appropriately funded in Budget Activity 7.	ents under this ntegration an units. Upgrad et Activity 7.	s PE will be d performan les will be a	developed n ce testing to ccomplished	naking maxin assure suital on site. Th	mum use of bility for pro	NDI element ocurement. C support deve	s. After sel Ince approv Iopment of	ection and a ed for procu upgrades to	PE will be developed making maximum use of NDI elements. After selection and assembly, the performance testing to assure suitability for procurement. Once approved for procurement, an use will be accomplished on site. These projects support development of upgrades to current produces will be accomplished on site.	pgrade ıction
FY 1995 Accomplishments: Program not funded in FY 1995	in FY 1995									
FY 1996 Planned Program: Program not funded in FY 1996	in FY 1996									
 FY 1997 Planned Program: 1448 Initiate modification to integrate the JTIDS commo net into JTAGS. 386 Initiate modification to fuse DSP sensor data with data from other battlefield sensors. 290 Initiate modification to calibrate sensor via in-theater beacons. Total 2124 	rate the JTID OSP sensor d rate sensor vi	S commo net into JT ata with data from o a in-theater beacons.	commo net into JTAGS. a with data from other bin-theater beacons.	S. battlefield se	ensors.					
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Value		FY 1995 0 0	·	FY 1996 0	FY 1997 0 0					,
Adjustments to Appropriated Value Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget			•	c	2124					A de de la contractor d
Current President's Budget Submit			U Danie 1 al	0 6 6	2124		Ĺ		3	
Project M635			Fage I of 3 Fages	3 Fages	Andrew Control	A COLUMN TO THE PARTY OF THE PA	EXDIC	Exhibit K-2 (PE 0208053A)	UZU8U53A)	

RDT&E BUDGET ITEM JUSTIFICATIO	FICATION SHEET (R-2 Exhibit) DATE MAI	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208053A Joint Tactical Ground System (TIARA)	PROJECT M635
Change Summary Explanation: Funding: The Dod budget funds the upgrades to JTAGS beginning in FY 1997.		
1005 XI	1007 VT 000 VT 1000 VT 1000 VT	•
	2846 F1 2000 2846 0	Conp. Cost. 0 35855
D. Schedule Profile	FY 1996 2 3 4 1 2 3 4	<u>Aggregation in the second annual second</u>
n	2 - × × × - × × ×	
Project M635	Page 2 of 3 Pages Exhibit R-2 (PE 0208053A)	3053A)





RDI	r&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	OST BF	REAKDO	WN (R-	3)	DATE March 1996	966
BUDGET ACTIVITY 7 - Operational System Development	l System De	velopmen			PE NUMBER AND TITLE 0208053A Joint	AND TITLE A Joint 1	Factical G	round Sys	PE NUMBER AND TITLE 0208053A Joint Tactical Ground System (TIARA)	PROJECT M635
A. Project Cost Breakdown Prime Contractor Contract Engineering Support Program Management Support Government Engineering Support Government Furnished Equipment Total	eakdown g Support nt Support ering Support ned Equipment			FY 1995	FY 1996	966	EY 1997 1715 127 170 112 0 2124			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Vehicle Date E	ion History and izations Contract Method/Type or Funding	Planning Info Award or Obligation Date	ormation Performing Activity EAC	Project Office EAC	Total Prior to EY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	o Total
Product Development Organizations Aerojet (Prime) C/CPFF Support and Management Organizations Proj Mgt/Matrix N/A Contract Eng Spt C/CPIF N	ent Organization C/CPFF gement Organiz N/A C/CPIF	ns ations N/A Mar 95	N/A N/A	N/A N/A	0 00	0 00	0 00	1715 170 127	1793 697 508	33
Govt Eng Spt Government Furnished Property: To be Defined	shed Property :	To be Defined	N/A	N/A	0	0	0	112	194	
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment d Management valuation				0000	0000	0000	1715 409 0 2124	1793 1399 0 3192	33 3508 99 1808 0 0 0 92 5316
Project M635				Pag	Page 3 of 3 Pages	S		Exhi	Exhibit R-3 (PE 0208053A)	(Y

	RDT&E BUDGET ITEM JUST		TIFICA	TON ST		IFICATION SHEET (R-2 Exhibit)	bit)		DATE M	March 1996	(A)
BUDG 7-(BUDGET ACTIVITY 7 - Operational System Development			PE NE 030	PE NUMBER AND TITLE 0303140A Com	ITLE ommuni	PENUMBER AND TITLE 0303140A COMMUNICATIONS Security (COMSEC)	ecurity (COMSEC	6	
				ğ W	Equipment						
	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
	Total Program Element (PE) Cost	7426	3623	3161	14609	14896	6844	6300		Continuing	Continuing
D491	D491 Communications Security Equipment Technology (COMSEC)	5085	2350	2574	940	1297	4834	4493		Continuing	Continuing
D501	D501 Army Key Management System (AKMS)	2341	1273	587	13669	13599	2010	1807		Continuing	Continuing

coordinates the services different technology efforts. The National Security Agency reviews each service RDT&E program to avoid duplication between and with their own. that C4I systems are protected against malicious or accidental attacks by our enemies or friends. AKMS is the result of restructure of the COMSEC project and is not a new include standards and testing. For the emerging multilevel network security, the Defense Information Systems Agency (DISA) Multi-Level Security (MLS) working group developed security technology in Army information systems. The Communications Security Equipment Technology (COMSEC) is to insure total signals and data security System security engineering, integration of available information security (INFOSEC) products, development (when required), and testing are services provided to ensure of all Army information systems, to include any operational enhancement and specialized Army configurations. The Army Key Management System (AKMS) automates start. Several joint service/NSA working groups exist in the area of key management to avoid duplication and to assure interoperability between all services' systems to Mission Description and Budget Item Justification: This program develops Information Systems Security (ISS) equipment and techniques required to combat threat key generation and distribution while supporting joint interoperability. It provides communications and network planning with key management on a single platform. Signal Intelligence capabilities and to insure our data network integrity. The Army's RDTE ISS program objective is to implement National Security Agency (NSA) These projects support development of upgrades to current production vehicles and are appropriately funded in Budget Activity 7.

Page 1 of 10 Pages 1410

Exhibit R-2 (PE 0303140A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	?-2 Exhi	bit)		DATE	March 1996	
вирсет Астіліт 7 - Operationa	вирвет астікіту 7 - Operational System Development			PE NI 030 Eq.	PE NUMBER AND TITLE 0303140A Com Equipment	TITLE Sommuni	cations	Security	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment		PROJECT D491
O	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to	Total Cost
D491 Communication (COMSEC)	Communications Security Equipment Technology (COMSEC)	5085	2350	2574	940	1297	4834	4493		Continuing	Continuing
A. Mission Descrip Agency (NSA) devel software or standard possible to the users. accreditations of Auto	A. <u>Mission Description and Budget Item Justification</u> Project D491 - Communications Security Equipment Technology: Project implements National Security Agency (NSA) developed security technology in Army information systems. Project objectives are to provide systems security mechanisms through encryption, trusted software or standard operating procedures to protect the information and to integrate these mechanisms into specified systems so secure operations are as transparent as possible to the users. This entails performing architecture studies and modeling, development models, system integration and testing, installation kits and certifications and accreditations of Automation Information Systems.	tion Project ny informati the informati cture studies	D491 - Co on systems. ion and to ir and modeli	mmunicatio Project obje ntegrate these ng, developr	ons Security ectives are to e mechanism nent models	Equipment provide sys is into specif , system inte	Technology tems securit ied systems gration and	Project in y mechanism so secure op testing, instanta	t D491 - Communications Security Equipment Technology: Project implements National Security ion systems. Project objectives are to provide systems security mechanisms through encryption, trusted tion and to integrate these mechanisms into specified systems so secure operations are as transparent as and modeling, development models, system integration and testing, installation kits and certifications is	tional Secur cryption, trast transparer as transparer nd certificat	ity sted t as ons and
Acquisition Strateg 96. Production Mile	Acquisition Strategy: Initial Operational Testing and Evaluation (IOTE) for Tactical End-to-End Encryption Device (TEED) will be done during Task Force XXI in FY 96. Production Milestone decision will be made after Joint Warfighter Demonstration in Fall FY 96.	nd Evaluatio r Joint Warfi	n (IOTE) fo ighter Demo	r Tactical Er mstration in	ıd-to-End Eı Fall FY 96.	ıcryption De	vice (TEED)) will be dor	ie during Tasl	k Force XX	in FY
FY 1995 Accomplishments:	hments: Completed concept development of the Tactical End-to-end Encryption Device (TEED) to include NSA certification. Initiated prototype development of the TEED Internet Security Manager (TISM) Procured, evaluated, and integrated platforms performing Guard functions between different classified levels User Initiated contract to design programmable COMSEC/TRANSEC functions Designed, fabricated and tested installation kits for the AIRTERM COMSEC	ent of the Ta nt of the TEI rated platfor grammable (1 installation	ctical End-te 3D Internet: ms performi 2OMSEC/T kits for the	o-end Encryl Security Mai ng Guard fu RANSEC fu AIRTERM	ption Device nager (TISM nctions betw nctions COMSEC	(TEED) to i l) 'een differen	nclude NSA t classified I	certification evels User	ť		
FY 1996 Planned Program: 1200 Continumanage 545 Continuspeakea 534 Initiatio Asynch 52 Small B Total 2350	rogram: Continue development of TEED Internet Security Manager, completing Critical Design Review, initiating software coding to perform network management security services of Key Management, Audit, and Access Control Continue development of re-programmable COMSEC/TRANSEC using Cypris Module or Digital Signal Processing (DSP) chips for embedment into speakeasy programmable digital radio. Initiation of Engineering and Manufacturing Development (EMD) at Baton TEED - a security device for Internet Protocol (IP) as well as Asynchronous Transfer Mode (ATM) networks. Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Revised Economic Assumption not available for execution	D Internet Son of Key Man ogrammable al radio. Annufacturin (ATM) netwoearch (SBIR) not available	ecurity Man agement, A COMSEC/ g Developm orks. //Small Bus le for execui	ager, comple udit, and Ac TRANSEC ι ent (EMD) ε iness Techne	eting Critica cess Control using Cypris at Baton TEl	l Design Rev Module or l ED - a securi er (STTR)	iew, initiatii Jigital Signa ty device fo	ig software of Processing	recurity Manager, completing Critical Design Review, initiating software coding to perform network nagement, Audit, and Access Control agement, Audit, and Access Control a COMSEC/TRANSEC using Cypris Module or Digital Signal Processing (DSP) chips for embedmeng Development (EMD) at Baton TEED - a security device for Internet Protocol (IP) as well as vorks. (3)/Small Business Technology Transfer (STTR)	form networ for embedn well as	k ent into
Project D491				Page 2 of 10 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0303140A)	03140A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION	E HERE	R-2 Exhibit)	DATE	March 1996	ဖ
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0303140A Com Equipment	тпс Communicatior	ЭТІТІЕ Communications Security (COMSEC) t		PROJECT D491
 FY 1997 Planned Program: 2574 Delivery of TEED Internet Security Manager (TISM) for usage with TEED and Integrated System Controller (ISYCON); testing in Army/Joint and civilian test bed begins, testing of reprogrammable COMSEC/TRANSEC in tactical settings. Continues EMD TEED development. EMD TEED will protect Army computer network users from hackers, deception and other forms of electronic attack on the Internet. Begin "electronic operations" research to investigate techniques to counter electronic terrorism virus and masquerade against Army assets. 	IISM) for usag ble COMSEC, kers, deception ectronic terrori	ge with TEED ar /TRANSEC in t n and other forn sm virus and ma	nd Integrated System actical settings. Conting of electronic attack isquerade against Arn	Controller (ISYCON); tesnues EMD TEED develoon the Internet. Begin "or assets.	sting in Army/Jo opment. EMD T electronic operat	int and EED will ions"
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustment to Budget Year (FY 1997) since	<u>FY 1995</u> 5194 5085	FY 1996 2363 2327 -23	FY 1997 2644 -70			
FY 1996 President's Budget Current President's Budget Submit	5085	2350	2574			
Change Summary Explanation: Funding: FY 96 - Revised Economic Assumption (\$-23) FY97 - Revised Inflation Rates (\$-70)						
C. Other Program Funding Summary: None						egge o a l anged and
D. Schedule Profile FY 1995 1 2 3	4	FY 1996 2 3	4 1 2	FY 1997 2 3 4 1	FY 1998 2 3	4
TEED Prototype Model Testing TEED Prototype Model Delivery Trusted Network Base contract award Trusted Network Base system review Trusted Network Base system integration	× × ×		×	×		
Re-Programmable COMSEC award	X	Page 3 of 10 Pages		Exhibit R-2 (Exhibit R-2 (PE 0303140A)	
Project 1)491	J ug			y tricusty forgon and an analysis are seen was consistent of the processors and definitions are also		A CONTRACTOR OF THE PROPERTY O





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICA-	TION SHEET (R-2 Exhik	oit)	Ω	DATE March 1996	9661
вироет астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0303140A Com Equipment	D TITLE Communic t	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	urity (C	OMSEC)	Р ROJE СТ D491
D. Schedule Profile FY 1995		FY 1996		Y 199		V 199	2
Re-Programmable COMSEC card design Re-Programmable COMSEC card design Integration into multiband, multimode digital radio AIRTERM installation kits designed AIRTERM installation kits testing INFOSEC COTS evaluations Secure Gateway Study Acquisition Planning and Procurement Packages for SEGAT, Wireless LAN,NDI Evaluation, Installation Support and Material Acquisition Contracts	~ × × × × × × × × × × × × × × × × × × ×	1 2 3 X X Page 4 of 10 Pages	4 × - × ×	z × 	Exhibit	X X X X Exhibit R-2 (PE 0303140A)	€ 4 ×
		O + F +					

N N N N N N N N N N N N N N N N N N N	RDT&E PROGRAM ELEMENT/P	ZMEE	MENTPR	ROJECT COST BREAKDOWN (R-3)	SOST BE	E KDO	N (R-S)		DATE	March 1996	9
вирсет Астіvіту 7 - Operational System Development	System Dev	/elopmenî		A. C. Later of C.	PE NUMBER AND TITLE 0303140A Com Equipment	AND TITLE A Comm	D ТITLE Communications Security (COMSEC) t	s Security	(COMSE		PROJECT D491
A. Project Cost Breakdown Ancillary Hardware and Software Development System Engineering Government Engineering Support Travel Miscellaneous Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Revised Economic Assumption not available for execution Total	ikdown Id Software Deving Support ation Research (STTR) sumption not av	relopment SBIR)/Small] ailable for ex	Business	FY 1995 3094 725 1106 90 70 5085	FX	1996 1146 0 1023 60 50 52 52 19 19	FY 1997 1330 0 1134 60 50 2574				
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehic	ations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	FY 1998	Budget to Complete	Total <u>Program</u>
Product Development Organizations GTC, Tampa, FL C-CPFF GTE, Waltham, C-CPFF	nt Organization C-CPFF C-CPFF	k AUG 91 AUG 93	8687 3857	8687 3857	113435 600	0 2491	099	800	0	5500 20000	118935
MA TBD Rome Labs Alliant Tech Sys.,	C-CPFF MIPR C-CPFF	JUN 95 FEB 95 OCT 91	2050 1525 1100	2050 1525 1100	009	966 600 583	0 450 0	009	0 0 0	6000 0 cont'd	6966 6078 cont'd
CECOM, RDEC NSA TEXCOM, Tinton	PO MIPR SS-CPFF	OCT 95 MAR 95 FEB 91	700 200 900	700 200 900	006	0 145 300	1250 300 0	1174 0 0	940	cont'd 0 0	cont'd 845 3000
ralls, NJ Totals Support and Management Organizations: N/A Project D491	ement Organiza	ations: N/A	AND THE PROPERTY OF THE PROPER	Pag	Page 5 of 10 Pages	5085 jes	2350	2574 Ext	4 940 Exhibit R-3 (PE 0303140A)	0303140A)	





RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	REAKDO	JWN (R-	3)	DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140A Com Equipment	AND TITLE Comment Comment A Comment Comment	unication	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	(COMSE		РКОЈЕСТ D491
Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC Test and Evaluation Organizations: N/A	t Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	FY 1998	Budget to Complete	Total <u>Program</u>
Government Furnished Property: N/A							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	115535 0 0 0 115535	5085 0 0 5085	2350 0 0 2350	2574 0 0 2574		31426 0 0 31426	157053 0 0 156970
Project D491	Page 6 of 10 Pages	ges		Exh	Exhibit R-3 (PE 0303140A)	0303140A)	
	1715						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		TFICA.	SVOL		2 Exhi	bit)		DATE Mar	March 1996	1 0
BUDGET ACTIVITY 7 - Operational System Development	وسوي		PE NI 030	0303140A Com	ritle Sommuni	cations 5	security (ENUMBER AND TITLE 0303140A Communications Security (COMSEC)	E Q	PROJECT D501
			1							
COST (In Thousands) FY 1995 Actual	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	0	Cost to Complete	Total Cost
D501 Army Key Management System (AKMS)	2341	1273	587	13669	13599	2010	1807	O	Continuing	Continuing Continuing

key generation, distribution and management while enhancing joint interoperability. It eliminates paper encryption key and provides communications network planning with A. Mission Description and Budget Item Justification Project D501 - Army Key Management System (AKMS): This program provides decentralized and automated key management on a single platform.

Acquisition Strategy: AKMS Initial Operational test and Evaluation (IOTE) is scheduled May FY 96 with IOC in FY97.

FY 1995 Accomplishments:

workstation
AKMS
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opment
e devel
softwar
nued the
Contir
2076

265 Provided contractor and programmatic support to the Automated Net Control Device (ANCD) Key Distribution Device (KDD), Army's engineering support to Tier I theater level and Commander In Chief regional controller effort

2341 Total

FY 1996 Planned Program:

- Complete workstation software 800 298 139 28
- Develop software upgrade to ANCD software
- Develop software upgrade to KDD software
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)
- Revised Economic Assumption not available for execution
 - 1273 Total

FY 1997 Planned Program:

- 200 Develop software upgrade to the AKMS workstation
 249 Develop software upgrade to ANCD software
 138 Develop software upgrade to KDD software
 587
- Total

Project D501

Page 7 of 10 Pages

Exhibit R-2 (PE 0303140A)





RDT&E BUDGET ITEM JUS	R JUST	IFICAT	TIFICATION SHEET (R-2 Exhibit)	EET (R	-2 Exhil	oit)		DATE	March 1996	96
BUDGET ACTIVITY 7 - Operational System Development			PE NUI 0303 Equ	PE NUMBER AND TITLE 0303140A Com Equipment	ıT∟E ommuni	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	ecurity (COMSE		РКОЈЕСТ D501
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to EV 1006		FY 1995 2391 2341	FY	FY 1996 1281 1273	FY 1997 603					
Adjustment to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit		2341		1273	-16					
Change Summary Explanation: Funding: FY97 - Revised Inflation Rates (\$-16)										
C. Other Program Funding Summary OPA. Z16800 OPA. TA0600 OPA BB1611 OPA MA9106 OPA TA0200 OPA BS9716	FY 1995 13718 13389 3470 0	FY 1996 13708 10758 0 3933 527 568	FY 1997 13556 10678 0 0 0 0 861	FY 1998 0 13065 0 0 0 0 0 0	EY 1999 0 11321 0 0 0 0 391	FY 2000 0 8899 0 0 0 0 988	FY 2001 0 9944 0 0 0 0 0		To Comp cont'd cont'd cont'd 0 0	Total Cost cont'c cont'c cont'c Cont'c Cont'c
D. Schedule Profile	FY 1995 2 3		F)	FY 1996 2 3	4	FY 1997 2 3	7 3 4	yeard	FY 1998 2 3	4
AKMS Decision Brief AKMS Award Competitive Follow-on Contract AKMS Computer Software Configuration	ı		×	×	×					
Item Testing AKMS Initial Operational Test & Evaluation					×					
AKMS Milestone III AKMS Type Classification AKMS Material Release							×××			
Project D501			Page 8 of 10 Pages	0 Pages			Exhibi	t R-2 (PE	Exhibit R-2 (PE 0303140A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	y (COMSEC) D501
Y 199	FY 1997	FY 1998
AKMS Begin Fielding with Upgraded	, , , , , , , , , , , , , , , , , , ,	4 2 3 4
AKMS Initial Operational Capability AKMS Material Release ANCD AKMS Material Release Work Station		××
Project D501	Page 9 of 10 Pages	Exhibit R-2 (PE 0303140A)





RDT&E PROGRAM ELEMENT/PR	OJECT C	PROJECT COST BREAKDOWN (R-3)	DOWN (R-3)	DATE March 1996	1996
вирдет Астіvітץ 7 - Operational System Development		PE NUMBER AND TITLE 0303140A Com Equipment	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	rity (COMSEC)	РКОЈЕСТ D501
	FY 1995 2076 190 75	FY 1996 750 298 167 22 28 8 1273	FY 1997 354 115 118		
Project D501	Page	Page 10 of 10 Pages		EXIIIDIL K-3 (PE USUS 14UA)	(A)

RDT&E BUDGET ITEM JUST			TION SE		IFICATION SHEET (R-2 Exhibit)	bit)		DATE	March 1996	6
BUDGET ACTIVITY 7 - Operational System Development			PE NU 030 Gro	PE NUMBER AND TITLE 0303142A Sate Ground Enviror	ritle iatellite C ironment	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	cations (SATCON	(1	
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost	68935	54362	40677	54067	16327	35493	30545	0	Continuing	Continuing
D2PT SMART-T Operational Test	0	0	142	4708	106	0	0	0	0	4956
D2RT SCAMP Operational Test	0	267	0	0	0	0	0		0	267
D253 Defense Satellite Communications Systems- Defense Communications Systems (DSCS- DCS)(Phase II)	31237	18290	17063	15226	11946	11871	11766		Continuing	Continuing
D384 SMART-T	30108	21226	17217	23764	95	4495	3700		Continuing	Continuing
D386 SCAMP	3168	9549	1029	6056	0	14342	15079		Continuing	Continuing
D455 MILSTAR EDM Terminal (Includes All Four Major Army MILSTAR Terminal Programs Thru FY93)	763	786	878	0	0	0	0		0	299925
D456 Tactical Satellite Communications System	3659	4244	4348	4313	4180	4785	0	0	Continuing	Continuing

Agent for MILSATCOM Ground Subsystems. As Executive Agent for MILSATCOM Ground Subsystems, Army is responsible for developing, procuring, and maintaining connectivity to satisfy JCS Command, Control, Communications, and Intelligence (C31) supporting the President; JCS; CINCS; Military Departments; Department of State; and manufacturing development (DoDD 5000.1), but which have received approval for production through DAB or other action, or production funds have been included in and other Departments and Agencies of the government. The projects in this Program Element support development acquisition programs or upgrades, still in engineering the life cycle logistics support for satellite terminals; satellite control subsystems; communications subsystems; and all related equipment required to achieve end-to-end Mission Description and Budget Item Justification: Military Satellite Communications (MILSATCOM) systems are Joint program/project efforts with each Service, Joint Chiefs of Staff (JCS), National Command Authority, Commanders-In-Chief (CINCs), National Security Agency and Office of the Secretary of Defense assigned Frequency (EHF) MILSTAR system; the UHF Follow-On Satellite system; and all MIL-STD-1582C compatible payloads. MOP 37 designates Army as the Executive specific responsibilities as specified in JCS Memorandum of Policy (MOP) 37. The worldwide MILSATCOM systems are the Ultra High Frequency (UHF) Fleet Satellite/Air Force Satellite (FLTSAT/AFSAT) system; the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Extremely High the DoD budget submission for the budget or subsequent fiscal year, and are, therefore, placed in Budget Activity 7.

Page 1 of 29 Pages

Exhibit R-2 (PE 0303142A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SE	HEET (R	2-2 Exhit	oit)		DATE M	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development			95 NG	PE NUMBER AND TITLE 0303142A Sate Ground Enviror	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ommuni (SPACE	cations ((SATCOIV		PROJECT D2PT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D2PT SMART-T Operational Test	0	0	142	4708	106	0	0	0	0	4956
A. Mission Description and Budget Item Justification: Project D2PT - SMART-T Operational Test. Project D2PT finances the direct costs of planning and conducting operational testing and evaluation of the Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) by the Operational Test and Evaluation Command (OPTEC). SMART-T is an Acquisition Category (ACAT) IC system with an Initial Operational Test and Evaluation (IOTE) in FY 98. Operational testing is conducted under conditions as close as possible to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2PT is restructured from within PE 0303142A, Satellite Communications Ground Environment, and is not a new start. Starting in FY 96 and beyond, funding for operational testing of ACAT I systems is specifically programmed within the PE specific to each system. Previously, funding for operational testing was programmed in PE 0605712A, Support of Operational Testing.	ation: Proj Secure Mob ACAT) IC s: Intered in acti and suitabilit 96 and beyo	ect D2PT - ile Anti-Jam /stem with a nal combat v y of the syst nd, funding	SMART-T Reliable Ta In Initial Ope vith typical I em. Project for operation	Operationa octical Termi rational Tes Iser troops to D2PT is res nal testing of 2A, Support	ect D2PT - SMART-T Operational Test. Project D2PT file Anti-Jam Reliable Tactical Terminal (SMART-T) by the stem with an Initial Operational Test and Evaluation (IOTE Ial combat with typical user troops trained to employ the systy of the system. Project D2PT is restructured from within P and, funding for operational testing of ACAT I systems is spegrammed in PE 0605712A, Support of Operational Testing.	ct D2PT finT) by the C ion (IOTE) loy the syste n within PE tems is spec	ances the d pperational in FY 98. cm. OPTEC 0303142A ifically pro	irect costs of Test and Eva Dperational to provides As Satellite Co grammed with	planning an luation Con esting is con rmy leaders! mmunicatio	d imand ducted nip with ns Ground pecific to
Acquisition Strategy: Not Applicable.										
FY 1995 Accomplishments: No Planned program										
FY 1996 Planned Program: No Planned program										
FY 1997 Planned Program: • 142 Planning and preparation for SMART-T IOT&E Total 142	SMART-T I	JT&E								
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996)		FY 1995		FY 1996	FY 1997 199					,
Adjustments to Budget Year (FY 1997) since FY 1996	9661				-57					
President's Budget Current President's Budget Submit					142					
Project D2PT			Page 2 of 29 Pages	29 Pages	the second secon	en	Exhik	Exhibit R-2 (PE 0303142A)	303142A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE March 1996
вирдет Астімтү 7 - Operational System Development	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJECT SATCOM) D2PT
Change Summary Explanation: Funding: FY97 - (-57) reduction due to revised inflation rates		
C. Other Program Funding Summary: Not Applicable		
D. Schedule Profile	FY 1996 7	
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Project D2PT	Page 3 of 29 Pages Exhibi	Exhibit R-2 (PE 0303142A)
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RDT&E PROGRAM ELEMENT/PROJECT		COST BREAKDOWN (R-3)	EAKDO	WN (R-	3)	_{DATE} March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ы тітіе Satellii nvironm	te Commu	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCOM)	PROJECT D2PT	Τ.
A. <u>Project Cost Breakdown</u> Operational Test and Evaluation Total	FY 1995	FY 1996	9 6	FY 1997 142 142				a de la companya de
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Contract Government Method/Type Award or Performing Performing Or Funding Obligation Activity Vehicle Date EAC Product Development Organizations: Not Applicable Support and Management Organizations: Not Applicable	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 199 <u>5</u>	FY 1996	FY 1997	Budget to <u>Complete</u>	Pro	Total <u>Program</u>
Test and Evaluation Organizations OPTEC Jan 97					. 142	4	4814	4956
Government Furnished Property: None								e spenierania di
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					142	4.4	4814 4814	4956 4956
								kati ya yanga miyangi saki ya 20 kisi ya ya yi saki 1800 ki 1800
Project D2PT	Pag	Page 4 of 29 Pages			Exhib	Exhibit R-3 (PE 0303142A)	(2A)	

RDT&E BUDGET ITEM JUSTI		FICA	TION SE		FICATION SHEET (R-2 Exhibit)	bit)	A Control of the Cont	DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development			PE Nt 030 Gro	PE NUMBER AND TITLE 0303142A Satel Ground Environ	FENUMBER AND TITLE 0303142A SAFCOM (SATCOM) Ground Environment (SPACE)	communi t (SPACE	cations (SATCON		PROJECT D2RT
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D2RT SCAMP Operational Test	0	267	0	0	0	0	0		0	267
A. Mission Description and Budget Item Justification: Project D2RT - Scamp Operational Test: Project D2RT currently finances the direct costs of planning and conducting testing and evaluation of the Single Channel Anti-Jam Manportable (SCAMP) terminal by the Operational Test and Evaluation Command (OPTEC). SCAMP Block I has been redesignated an Acquisition Category (ACAT) III system requiring Phase I Operational Test to evaluate early operational suitability of contractor prototype hardware prior to award of the FY97 option. OPTEC provides Army leadership with an independent test and evaluation effectiveness and suitability of the system. Project D2RT is restructured from within PE 0303142A, Satellite Communications Ground Environment, and is therefore, not a new start.	ation: Proje unel Anti-Ja jory (ACAT) ion. OPTEC	et D2RT - S n Manporta III system r provides Aı , Satellite C	camp Oper ble (SCAMP equiring Pha my leadersh ommunicatic	ational Tes) terminal t se I Operati ip with an i	n: Project D2RT - Scamp Operational Test: Project D2RT currently finances the direct costs of planning and Anti-Jam Manportable (SCAMP) terminal by the Operational Test and Evaluation Command (OPTEC). SCAM (ACAT) III system requiring Phase I Operational Test to evaluate early operational suitability of contractor OPTEC provides Army leadership with an independent test and evaluation effectiveness and suitability of the 303142A, Satellite Communications Ground Environment, and is therefore, not a new start.	2RT currentl ional Test an evaluate earl est and evalu t, and is there	y finances the Evaluation y operational lation effecti	e direct cos Command I suitability veness and sew start.	ts of plannin (OPTEC). s of contractor suitability of	g and SCAMP the
Acquisition Strategy: Not Applicable.										
FY 1995 Accomplishments: No planned program										
 FY 1996 Planned Program: 267 Evaluate Pre-Award Equipment Demonstrations and Phase I Operational Test Total 267 	ent Demonstı	ations and F	hase I Opera	ational Test						
FY 1997 Planned Program: No planned program										
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995		FY 1995		<u>FY 1996</u> 274	FY 1997					
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996	1996			269						
President's Budget Current President's Budget Submit				267						
Project D2RT			Page 5 of 29 Pages	29 Pages			Exhibi	t R-2 (PE (Exhibit R-2 (PE 0303142A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJECT D2RT
Change Summary Explanation: Funding: FY 96 (-2) the portion of this program that has been proposed for rescission	rescission	
C. Other Program Funding Summary: Not Applicable		
D. Schedule Profile	FY 1996 FY 1997	
Project D2RT Page	Page 6 of 29 Pages Exhibit R-2 (PE 0303142A)	3142A)

RDT&E PROGRAM ELEMENT/PROJ	ECTC	ROJECT COST BREAKDOWN (R-3)	X K DO	WN (R-3		DATE March 1996	1996	
вирсет АстіvітY 7 - Operational System Development		PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	TITLE Satellit /ironm	e Commu	nications SE)	(SATCOM)	PROJECT D2RT	L L
 A. Project Cost Breakdown Evaluate Pre-Award Equipment Demonstrations and Conduct Phase I OT&E Total 	FY 1995	FY 1996 267 267		FY 1997				
B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity Date EAC 18: Not Applicable ations: Not Applicable	Project Office <u>EAC</u>	Total Prior to FY 1995 FY	FY 1995	FY 1996	FY 1997	Budget to Complete		Total Program
OPTEC 1996				267				267
Government Furnished Property: None								a timo di mandana produce di di
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				267				267
							·	y digitalence in the 1990 person and the School (1991 person pe
Project D2RT	Page	Page 7 of 29 Pages			Exhit	Exhibit R-3 (PE 0303142A)	(2A)	
		1426						





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhil	bit)		DATE M	March 1996	9
вирсет Астіvіту 7 - Operational	вирдет Астіміту 7 - Operational System Development			PE NI 030 Gro	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	гіт <u>ге</u> satellite C ironment	community (SPACE	ications (:)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)		РРОЈЕСТ D253
ŏ	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D253 Defense Satellit Defense Commo DCS)(Phase II)	Defense Satellite Communications Systems- Defense Communications Systems (DSCS- DCS)(Phase II)	31237	18290	17063	15226	11946	11871	11766		Continuing	Continuing
A. Mission Descript Ground Subsystem eα Defense Satellite Con role of the Armed Fo	A. Mission Description and Budget Item Justification: Project D253 - DSCS-DCS Phase II: This project provides funds required to develop strategic and tactical Ground Subsystem equipment to support JCS validated Command, Control, Communications and Intelligence (C31) for the worldwide Super High Frequency (SHF) Defense Satellite Communications System (DSCS) program. Continuing upgrades for the DSCS are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS provides warfighters multiple channels of tactical connectivity as well as interface with strategic networks and national decision makers.	ation: Proted Commar Program: Cc Program: Cc	ject D253 - nd, Control, entinuing up	DSCS-DCS Communica grades for th actical comp	Phase II: T tions and Int te DSCS are ectivity as w	his project pelligence (Contains) vital to suppell as interfa	orovides fungal) for the wort the emer	ds required to vorldwide Su ging power tegic networl	Project D253 - DSCS-DCS Phase II : This project provides funds required to develop strategic and tactical nmand, Control, Communications and Intelligence (C3I) for the worldwide Super High Frequency (SHF). Continuing upgrades for the DSCS are vital to support the emerging power projection and rapid deploymentiple channels of tactical connectivity as well as interface with strategic networks and national decision maker.	rategic and trequency (SH on apply depl	nctical F) oyment nakers.
Acquisition Strates Adaptation and Repla and acquisition year 1 96. The DSCS Integr	Acquisition Strategy: Both the Universal Modem (UM) Development, Replacement Satellite Configuration Control Element (RSCCE) Non-development Item (NDI) Adaptation and Replacement BATSON (RBATSON) Programs will be followed by Competitive Firm Fixed Price Procurement Programs that contain a basic production and acquisition year followed by several option years of production. The AN/USC-28 engineering effort has been followed by a sole source acquisition of hardware in FY 6. The DSCS Integrated Management System (DIMS) program (software) does not have a follow-on production program.	(UM) Deve f) Programs 's of product MS) program	lopment, Re will be follo ion. The Al ı (software)	placement S wed by Com I/USC-28 er does not hav	opment, Replacement Satellite Configuration Control Elen vill be followed by Competitive Firm Fixed Price Procuren on. The AN/USC-28 engineering effort has been followed (software) does not have a follow-on production program.	figuration Cc n Fixed Price fort has been n productior	ontrol Eleme a Procureme a followed b	ent (RSCCE) ent Programs by a sole sour	Non-develo that contain ce acquisitic	pment Item (a basic prod on of hardwa	(NDI) uction re in FY
FY 1995 Accomplishments:	Continued basic Universal Modem development and initiated the Medium Data Rate (MDR) Technical Insertion UM program. Continued development for DSCS Training Devices Completed engineering development for the AN/USC-28 embedded computer and continuation of miscellaneous upgrades Continued development of DIMS Interface Software (Phase I) Initiated the NDI Adaptation Phase for the RSCCE Continued support and upgrades to the Integrated Research Facility (IRF) and Systems Engineering Technical Support (SETA) efforts	odem develo SCS Trainin pment for tl IMS Interfac Phase for the les to the Int	pment and ig Bovices The AN/USC. The Software (RSCCE RSCCE RScce	nitiated the 1 28 embedde (Phase I) aarch Facility	Medium Dat: 'd computer 'y (IRF) and !	a Rate (MDF and continus Systems Eng	t) Technical ttion of misc ineering Tec	Insertion UI sellaneous uț	M program. grades ort (SETA) (efforts	
FY 1996 Planned Program:	ogram: Complete UM development and continue MDR Technical Insertion UM Program Continue DIMS Interface Software (Phase I) Continue NDI Adaptation Phase of RSCCE Develop the Specification and Acquisition Requirements Package for RBATSON Complete DSCS Training Device development.	nd continue] tware (Phase ise of RSCC) Acquisition	MDR Techn 1) E Requiremen	ical Insertio	n UM Progr: for RBATSC	um N(

Page 8 of 29 Pages 1427

Project D253

Exhibit R-2 (PE 0303142A)

RDT&E BUDGET ITEM JUSTIFICATI	FICATION SHEET (R-2 Exhibit)		DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	SATCOM) D253
 FY 1996 Planned Program: (continued) 2833 Continue IRF and SETA 400 Task Force XXI 30 Revised Economic Assumptions amount not available for execution 422 Small Business Innovation Research / Small Business Technology Total 18290 	or execution echnology Transfer P	available for execution Business Technology Transfer Program (SBIR/STTR)	
 FY 1997 Planned Program: 4350 Complete MDR Technical Insertion UM Program 2800 Continue DIMS Interface Software (Phase II) 2000 Complete the NDI Adaptation Phase for the RSCCE 2800 Initiate development of the Replacement BATSON 2000 Initiate development of the Integrated Baseband Workstation (IBWS) 3113 Continue IRF and SETA Total 17063 	ation (IBWS)		
B. Project Change Summary Previous President's Budget (FY 1996) 31861 Appropriated Amount (FY 1995) 31237	FY 1996 19055	<u>FY 1997</u> 21313	
Adjustment to FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY97) since FY 96	18474 -184	-4250	
President's Budget Submit 31237	18290	17063	
Change Summary Explanation: Funding: FY 96: (-184) the portion of the program that has been proposed for rescission FY97: (-4250) Total Adjustment. (-3800) of adjustment is due to a realignment of RDT&E funds from Project D253 to OPA funds SSN: BB8416. (-450) reduction due to revised inflation rates.	d for rescission to a realignment of R evised inflation rates.	DT&E funds from Project D253	
Project D253	Page 9 of 29 Pages	Exhib	Exhibit R-2 (PE 0303142A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICAT	ION SH	EET (R.	-2 Exhib	jt)		DATE Mar	March 1996	
BUDGET ACTIVITY 7 - Operational System Development			PE NUN 0303 Grou	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ommunic (SPACE)	ations (D ТІТІЕ Satellite Communications (SATCOM) Ivironment (SPACE)	PRC D2	PROJECT D253
C. Other Program Funding Summary OPA 2 - SSN: BB8500	<u>FY 1995</u> 103469	FY 1996 72403	FY 1997 97528	FY 1998 87626	FY 1999 100246	FY 2000 66106	FY 2001 65639		To <u>Compl</u> Cont.	Total <u>Cost</u> Cont.
D. Schedule Profile 1 RSCCE Contract Award DSCS Trainer H/W & S/W Integration Test	FY 1995 2 3 X*	4	1 2 X*	FY 1996 2 3	4	FX 1997 2 3	3 4			
UM Tech/International Test RSCCE Testing including Init Oper Test Award R-BATSON Contract DIMS Interface SW Testing (Phase I) IBWS System Specification Completion			×			***				
* Denotes Milestone Completion										
Project D253		r	Page 10 of 29 Pages	9 Pages			Exhib	Exhibit R-2 (PE 0303142A))3142A)	
			1429							

RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	KDOWN (R-3)	DATE March 1996	9661
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ns (SATCOM)	PROJECT D253
A. Project Cost Breakdown Development (Prototype, Sys Engr, Test & Eval) Integrated Research Facility Contractor Engineering Support Government Engineering Support Program Management Support Revised Economic Assumptions SBIR/STTR Total	FY 1995 FY 1996 25047 12017 610 700 758 1052 3597 2454 1225 1615 0 422 31237 18290	EY 1997 11987 800 860 1901 1515 0 0		
B. Budget Acquisition History and Planning Information: Not Applicable.	ble.			and the second s

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Project D253

Exhibit R-3 (PE 0303142A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICA.	TION SI	HEET (R	-2 Exhil	bit)		DATE Ma	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t.		PE NI 030 Gro	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	⊓⊓∟E katellite C ironment	ommuni t (SPACE	cations ()	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)		PROJECT D384
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D384 SMART-T	30108	21226	17217	23764	95	4495	3700		Continuing	Continuing Continuing

permit uninterrupted communications as our advancing forces move beyond the line-of-sight capability of MSE. This equipment will communicate at both low and medium A. Mission Description and Budget Item Justification: Project D384 - SMART-T. The Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) will provide a data rates (LDR/MDR) over the MILSTAR satellite constellation. It will also be compatible with the UHF Follow-On (UFO); the Navy Fleetsatcom EHF satellite package; stated above. The SMART-T will also have Low Probability of Interception and Low Probability of Detection (LPI/LPD) to avoid being targeted for destruction, jamming range extension capability for the Army's Mobile Subscriber Equipment (MSE) to support the Force Projection Army. Specifically, it will provide a satellite interface to and MIL-STD-1582B/C compatible payloads. It will provide the security, mobility, and anti-jam capability required to defeat the threat and satisfy the critical need as or intercept. The prime mover will be a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) configured with all the electronics and the self-erectable antenna.

LRIP/FSP proposals. A SMART-T Milestone III Decision will be conducted prior to exercising the first FSP Option in FY 99. The total Army terminal requirement is 209, FSP quantities (157 Army terminals) will be awarded as fixed price options to the LRIP/FSP contract following Milestone III approval. Additional quantities (i.e., 178) will included a reliability growth plan to achieve the required reliability by Follow-On Test and Evaluation (FOT&E). Both Low Rate Initial Production (LRIP) and Full Scale of which 43 will be procured during LRIP (base year plus one option) to ensure sufficient quantities are available for the launch of the first MDR satellite in FY 99. The Plus-Incentive-Fee (CPIF) contracts. The contracts were awarded on 9 Nov 92 to Raytheon Company (Marlborough, MA) and Rockwell International (Richardson, TX). Acquisition Strategy: The SMART-T program employs a competitive development strategy. The development phase included two contractors performing under Cost-Twelve Engineering Development Model (EDM) terminals (6 from each contractor) were developed under the two contracts. The streamlining features of this phase Production (FSP) were competitively awarded to Raytheon Company on 7 Feb 96 under a single contract (2QFY96) based upon the development contract effort and be procured for the Air Force, Marine Corps, JCSE, Navy, and other DoD Special Users.

FY 1995 Accomplishments:

- 25634 Continued Contractor Technical Test
- 1789 Conducted Payload to Terminal Interface Test (MST-3000)
- 2685 Conducted Terminal Test with Lincoln Lab Medium Data Rate (MDR) Simulator

Total 30108

1431

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Project D384

Exhibit R-2 (PE 0303142A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R	DATE	March 1996
вирсет Астилту 7 - Operationa	зирдет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	lite Communications (SATCO	St. Control of the Co
FY 1996 Planned Program:	rogram: Complete Contractor Technical Test and obtain Low Rate Initial Production (LRIP) Decision Begin development effort for Joint Interoperability Standard, Automated Communications Management System, Network Control, and Demand Assigned Multiple Access Begin development of interactive training courseware Revised Economic Assumption - Not available for execution SBIR/STTR	te Initial Production (L dard, Automated Comi ution	.RIP) Decision munications Management System, Network Contro	ol, and Demand
FY 1997 Planned Program:	Program: Continue implementation of Automated Communications Management System, Network Control, Demand Assigned Multiple Access and Payload Specification Changes Continue development of interactive training courseware Conduct Terminal Test with Lincoln Labs MDR Simulator	ns Management System e tor	a, Network Control, Demand Assigned Multiple Ac	ccess and Payload
B. Project Change Summary Previous President's Budget (FY Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996)	B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995 Appropriated Amount (FY 1996)	<u>FY 1996</u> 21849	FY 1997 10896	
Adjustment to FY 1996 Adjustments to Budget Y President's Budget	Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget	21440 -214	+6321	
Current President'	Current President's Budget Estimate Submit 30108	21226	17217	
Change Summary Explanation: Funding: FY 95: (+29 FY 96: (-214 FY97: (+673 inflati	y Explanation: FY 95: (+2987)Reprogrammed into PE to continue competitive development efforts FY 96: (-214) the portion of the program that has been proposed for rescission. FY 97: (+6730) plus-up to fund interactive courseware development effort, some system level tests and network control efforts and (-409) due to revised inflation rates.	titive development effc bosed for rescission. lopment effort, some s	orts ystem level tests and network control efforts and (-	-409) due to revised
Project D384	I.	Page 13 of 29 Pages	Exhibit R-2 (PE 0303142A)	303142A)
			mandates in the control of the contr	And the second of the second o





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICAT	ION SH	EET (R	-2 Exhib	oit)		DATE Mar	March 1996	
BUDGET ACTIVITY 7 - Operational System Development			PE NUN 0303 Grot	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ITLE atellite C ronment	ommuni (SPACE	cations)	Satellite Communications (SATCOM) vironment (SPACE)	PR(РРОЈЕСТ D384
C. Other Program Funding SummaryOther Procurement Army 2 - SSN: BC 4002Other Procurement Army 3 - SSN: BS 9720	FY 1995 I	FY 1996 64629 0	FY 1997 45427 0	FY 1998 33787 7755	FY 1999 79308 10144	FY 2000 88737 0	FY 2001 75720 13579		To Compl Cont Cont	Total Cost Cont Cont
D. Schedule Profile Conduct SIM 1 Test Conduct MST-3000 Test Release Solicitation for LRIP/FSP Complete Contract Technical Test Obtain LRIP Decision Receive 12 EDM Terminals Begin Joint Interoperability Standards Development effort Conduct SIM 2 Test *Denotes Milestone Completion	EY 1995 2 3 X*	4 ×	* * * * * * * * * * * * * * * * * * *	FY 1996 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4 L	EY 1997 2 3	22			
Project D384			Page 14 of 29 Pages	29 Pages			Exhil	Exhibit R-2 (PE 0303142A))3142A)	

RDT&E PROGRAM ELEMENT/P	GRAM EL		ROJECT (SOST B	REAKD	COST BREAKDOWN (R-3)	8	DATE March 1996	1996	on plant on an artistic
BUDGET ACTIVITY 7 - Operational System Development)evelopmen			PE NUMBER ANI 0303142A Ground En	PE NUMBER AND TITLE 0303142A Satelli Ground Environn	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	unications CE)	Satellite Communications (SATCOM) vironment (SPACE)	PROJECT D384	CT.
A. <u>Project Cost Breakdown</u> Contractor Government Systems Engineering & Project Mgmt Total	g & Project Mgn	ıt.	FY 1995 27928 2180 30108	띤	FY 1996 15222 6004 21226	FY 1997 10697 6520 17217				
B. Budget Acquisition History and Planning Information	nd Planning Inf	ormation								stooche iszar v
Performing Organizations										
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	e Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete		Total Program
Product Development Organizations Dual Development C-CPIF (<u>ions</u> 09 Nov 92	*	*	81207	27579	7345	0		di.	116131
Contracts Other Contracts					,	i i		(
Govt Support	17			4583	349 899	1963	1969/	50	Cont	Cont
Support and Management Organizations Other Contracts	HZations			9910	350	086	1515		Cont	Cont
Core Support				2185	906	753	400		Cont	Cont
Lincoln Labs				20160	0	009	803		Cont	Cont
* Contract effort completed										o la e glista de enconstante de e
March 10.00			ć	, c			:	1	;	a regulações de Colonia, en estado en es
Froject U384	elitorale charlestick in conjugate property and expension of the		Fagi	Page 15 of 29 Pages	ıges		Exhi	Exhibit R-3 (PE 0303142A)	42A)	4400000





RDT&E PROC	BRAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST B	REAKDO	WN (R-	3)	DATE March 1996	1996	
вирбет астіvіту 7 - Operational System Development	evelopmen	ţ	PE NUMBER AND TITLE 0303142A Satel Ground Environ	RAND TITLE 2A Satelli Environn	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCOM)	PROJECT D384	
Government Furnished Property Contract Contract Method/Type Item or Funding Description Vehicle Product Development Property CDH Chips/Chip MIPR Carriers	Award or Obligation <u>Date</u> Jul 93	Delivery <u>Date</u>	Total Prior to FY 1995 149	FY 1995	FY 1996	FY 1997	Budget to Complete	Prog	Total ogram 149
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			85939 34661 120600	28827 1281 30108	17185 4041 21226	12657 4560 17217	CONT		CONT CONT
						i L			
Project D384		7	rage 16 of 29 rages	iges		EXUIT	EXNIBIT K-3 (PE 0303142A)	(A)	1

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	SOL	TIFICATION SHEET (R-2 Exhibit)	1-2 Exhi	(Tiq		DATE	March 1996	Ø
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TITLE	A spieje a terral 2 dibratito propilla Nikoral propi		en is verez a maio sistema di mode a maio mentale de la come de la	Pl	PROJECT
7 - Operational System Development			030	3142A S	atellite C	communi	cations (3303142A Satellite Communications (SATCOM)		0386
			Š	ound Env	ironment	Ground Environment (SPACE)				eco vigoreno
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	edeke i jada cina ja jada cina jada jada jada jada jada jada jada ja	Cost to	Total Cost
D386 SCAMP	3168	9549	1029	9509	0	14342	15079		Continuing	Continuing Continuing

for command and control communications. Block I will provide priority tactical ground users with the capability to transmit and receive intelligence, command, and control and dust, and must operate in the transmit, receive or stand-by mode throughout an entire mission (typically 30 days). SCAMP BLK I is the first EHF manportable terminal A. Mission Description and Budget Item Justification: Project D386 - SCAMP. The SCAMP BLK I Terminal will provide a manportable, four simultaneous channel, full duplex communications and data transfer system at 2400 bits per second (bps) each. These satellite terminals are to be employed by units that require range extension traffic from a base station. It will transmit in the Extremely High Frequency (EHF) band and receive in the Super High Frequency (SHF) band. It will provide Low Data satellites which utilize the MIL-STD-1582C LDR waveform. It will be required to operate in environmental conditions that include smoke, aerosol, rain, fog, snow, haze Engineering Feasibility Efforts (EFE) to develop the objective terminal in the range of 12-15 pounds was approved in the Acquisition Decision Memorandum to begin in Units and the Hand-Held Terminal Unit. The SCAMP BLK I will be fully interoperable within the Army C4I Technical Architecture. The terminal will have embedded FY 96 through FY 99. A paging capability is also under development. These efforts will provide confidence in technical approach and lead to Milestone II Engineering Rate (LDR) secure voice at 2400 bps and secure data at 75-2400 bps, as well as interface with Common Hardware/Software devices such as the Lightweight Computer COMSEC and TRANSEC with set-up and tear-down in less than 10 minutes. In addition to operation on MILSTAR satellites, the SCAMP BLK I will operate on all and provides direct support to the tactical warfighter mobile forces with greater anti-jam protection, lower probability of intercept, and lower probability of detection and Manufacturing Development (EMD) Phase for the objective system. The SCAMP Block II effort that was previously funded in this PE was restructured to PE 3603856A, Project D389 in beginning in FY97.

contractors performing under Cost-Plus-Incentive-Fee (CPIF) which were competitively awarded in Sep 92. Based upon unexpected cost growth of both contractors and the and Antenna. These subsystems will utilize technologies such as Millimeter Microwave Integrated Circuits (MIMIC), custom Very Large Scale Integrated Circuits (VLSIC) lead to an objective 12-15 lb Block II terminal placing emphasis on downsizing the following subsystems: Radio Frequency (RF) Generator, Digital Processor, Transmitter, lack of government affordability to retain two, an early determination was made to Terminate for Convenience the Lockheed Corporation contract on 16 Sep 93. A Market contract was Terminated for Convenience. A Milestone III Decision for a competitive full scale production buy (quantity of 312 multi-service terminals) was approved on 15 Nov 94. An Advanced Planning Briefing to industry was held at Fort Monmouth, New Jersey, on 29 Nov 94. The SCAMP Engineering Feasibility Efforts (EFE) will Survey was conducted in Jun 94 in which 5 vendors participated. On 26 Oct 94, the AAE restructured the SCAMP Block I program and the Martin Marietta Corporation and increased efficiency power devices. Further weight savings and power efficiency increases will investigate battery technology and lightweight composite materials. The EFE efforts will lead to the Engineering and Manufacturing Development (EMD) Phase to begin in FY 00. On 7 Apr 95, the SCAMP Block I was redesignated an technologies to meet communications deficiencies resulting from Desert Storm and other operations. The Block I development phase initially included two competing ACAT III program. Team Fort Monmouth awarded the SCAMP Block I Firm Fixed Production Contract to Rockwell International, Richardson, Texas, on 23 Feb 96. Acquisition Strategy: The SCAMP terminal will be procured in a block approach. Block I will be a manportable terminal not to exceed 37 pounds using today's

Project D386

Page 17 of 29 Pages

Exhibit R-2 (PE 0303142)





RDT&E BL	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R.	-2 Exhibit)	DATE March 1996	96
вир бет Асті vіт у 7 - Operational System Development	velopment	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCOM)	РРОЈЕСТ D386
FY 1995 Accomplishments:	ments: Conducted Milestone III Decision Review Continued acquisition requirements activities Began Pre-award Evaluation/Demonstration Activities				
FY 1996 Planned Program: 3711 Complete Pre/l 5600 Begin Enginee 27 Revised Econo 211 SBIR/STTR Total 9549	ogram: Complete Pre/Post Award Evaluation/Demonstrations/Reviews Begin Engineering Feasibility Efforts (EFE) (i.e., lightweight composite structures, paging prototype system, enhanced vocoder, etc.) Revised Economic Assumption - Not available for execution SBIR/STTR	ws rt composite structur	es, paging prototype system, enhar	nced vocoder, etc.)	
FY 1997 Planned Program:	ogram: Conduct Electro-Magnetic Pulse (EMP) Tests Initiate UHF Follow-On (UFO) Waveform Modifications				
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	FY 1995 99 97 +3071	FY 1996 9883 9645	<u>FY 1997</u> 2871		
Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 Dravidant's Budget	997) since FY 1996	96-	-1892		
Current President's Budget Submit	3168	9549	1029		
Project D386	Page	Page 18 of 29 Pages	Exhir	Exhibit R-2 (PE 0303142A)	
		1437			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-	2 Exhibit)	DATE Marc	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	tions (SATCOM)	PROJECT D386	
 Change Summary Explanation: Funding: FY 95: (+3071) reprogrammed within PE to conduct Milestone III Acquisition Efforts FY 96 (-96) the portion of the program that has been proposed for rescission FY 97: (-1892) breakout as follows: (+6483) was previously reprogrammed into this line to fund approved EFE requirements. PE 0603856, Project D389 has been established and funds (-8310) were reprogrammed to it for follow-on efforts, (-15) reduction due to revised inflation rates. Schedule: Additional funds provided for execution of approved EFE in FY 96 (IAW APB dtd 15 Nov 94) 	estone III Acquisition Efforposed for rescission sly reprogrammed into this le reprogrammed to it for folgin FY 96 (IAW APB dtd 1	s ine to fund approved EFE low-on efforts , (-15) redu 5 Nov 94)	requirements. PE 060385	56, Project ion rates.	
C. Other Program Funding Summary FY 1995 FY 1996	6 FY 1997 FY 1998	FY 1999 FY 2000	FY 2001	To To Compl	Total Cost
	23555	1794			Cont
D. Schedule Profile FY 1995	FY 1996	EY 1997	4		All free free free free free free free fr
MS III Decision Review Begin Engineering Feasibility Efforts (EFE) Complete Pre-Award Equipment Demonstrations Conduct Pre-Award Review Award Production Contract Conduct Phase I Operational Test & Evaluation (OT&E) Award Rebuy Conduct Follow-On Test and Evaluation (FOT&E) Begin Fielding and Support *Denotes Milestone Completion	* * * *	×	\times \times		
Project D386	Page 19 of 29 Pages		Exhibit R-2 (PE 0303142A)	(142A)	
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RDT&E PROGRAM ELEMENT/PROJECT		REAKD	COST BREAKDOWN (R-3)	3)	DATE March 1996	1996
вирдет АСТІVІТY 7 - Operational System Development	0303142A Ground En		PENUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	unications (CE)	Satellite Communications (SATCOM) vironment (SPACE)	РRОЈЕСТ D386
A. Project Cost Breakdown Contractor Government Systems Engineering and Project Management Total	FY 1995 0 3168 3168	<u>FY 1996</u> 3517 6032 9549	FY 1997 544 485 1029			
B. Budget Acquisition History and Planning Information						
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office	ct Total ce Prior to C FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	to Total
Development Organizations** Aarietta CPIF Sen 92		0	0	0		
CPIF	9650	0	0	0		
ıtracts	11750	0	3517	544	ŭ	Cont Cont
Govt Support	4881	1747	1749	0	ŭ	Cont Cont
Support and Management Organizations: Other Contracts	6074	599	1426	0	ŭ	Cont Cont
Core Support	2094	822	890	85	ŭ	
Lincoln Labs	10385	0	1967	0	Ö,	
Lab Activities	353	0	0	0	ŏ	Cont Cont
Lest and Evaluation Organizations: EMP Test (Kirkland AFB)	0	0	0	400	ŏ	Cont Cont
** Lockheed Terminated for Convenience 9/93 ** Martin Marietta Terminated for Convenience 10/94						
Government Furnished Property: Not Applicable						
Project D386	Page 20 of 29 Pages	ages		Exhi	Exhibit R-3 (PE 0303142A)	(A)
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RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-		DATE Marc	March 1996	A Committee of the Comm
вирсет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ND TITLE Satellit invironm	e Commi	nications CE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJEC D386	PROJECT D386
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior to <u>FY 1995</u> 1 65279 18906	FY 1995 1747 1421	FY 1996 5266 4283	FY 1997 544 485	Buda	Budget to Complete Cont	Total Program Cont Cont
Subjoint Test and Evandation Total Project	84185	3168	9549	1029		Cont	Cont
Project D386	Page 21 of 29 Pages	82		Exhi	Exhibit R-3 (PE 0303142A)	142A)	
	1440				A TOTAL CONTRACTOR OF THE PROPERTY OF THE PROP	A CONTRACTOR OF THE PROPERTY O	





	RDT&E BUDGET ITEM JUS	EM JUS	TIFICATION SHEET (R-2 Exhibit)	ION SE	IEET (R	-2 Exhil	bit)		DATE M	March 1996	9
вирбет АстіvітУ 7 - Operational	зирсет АСТІVІТУ 7 - Operational System Development			PE NU 030 Gro	PE NUMBER AND TITLE 0303142A Satel Ground Environ	TILE atellite C ironment	PENUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	cations (PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)		РRОЈЕСТ D455
Ō	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D455 MILSTAR EDM Army MILSTAR	MILSTAR EDM Terminal (Includes All Four Major Army MILSTAR Terminal Programs Thru FY93)	763	786	878	0	0	0	0		0	299925
A. Mission Descript (EDM) terminals will (SMART-T) and Sing probability-of-interce	A. Mission Description and Budget Item Justification: Project D455 - MILSTAR EDM Terminal (MET). These EHF MILSTAR Engineering Development Model (EDM) terminals will be utilized as test assets to support satellite payload tests. They will also reduce risk in the Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) and Single Channel Anti-Jam Manportable (SCAMP) terminal development process. The terminals are capable of providing mobile, survivable, anti-jam, low probability-of-intercept communications from an S-250 shelter mounted on a Common Utility Cargo Vehicle (CUCV) truck towing a trailer with generator.	tion: Projector satellite ble (SCAMI) 50 shelter m	et D455 - M payload test) terminal do ounted on a	ILSTAR EI S. They will evelopment Common Ui	OM Termin also reduce process. Th	al (MET). Trisk in the Se terminals se Vehicle (CU	These EHF Niecure Mobil re capable c CV) truck to	AILSTAR E e Anti-Jam of providing wing a trail	ngineering I Reliable Tac mobile, surv er with gener	Development tical Termin rivable, anti- rator.	Model al iam, low
Acquisition Strateg Electronic Systems C production buy was 1	Acquisition Strategy: A single Full Scale Engineering Development (FSED) contract was awarded in Mar 85 to develop and produce 15 FSED terminals. Magnavox Electronic Systems Company received the award. A sole source production contract was to be executed in Nov 92; however, due to the changed world situation, no production buy was required. The MET will be used for SCAMP and SMART-T contractor risk reduction tests and satellite payload tests.	ing Develop sole source I for SCAMI	ment (FSED production conduction conduction conduction conduction conduction conduction conduction conduction conduction conduction)	contract w contract was T-T contrac	as awarded to be execur tor risk redu	in Mar 85 to ted in Nov 9 ction tests a	develop and 2; however, nd satellite p	I produce 15 due to the cl ayload tests	FSED term	inals. Magn d situation, n	3VOX O
FY 1995 Accomplishments: • 763 Continu Total 763	hments: Continued Government and Contractor support of testing with SCAMP and SMART-T to reduce risk	ontractor su	port of testii	ng with SCA	LMP and SM	[ART-T to r	educe risk				
FY 1996 Planned Program: Total FY 1996 Planned Program: 783 Continu Revised	rogram: Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk Revised Economic Assumption - Not available for execution	ntractor supj n - Not avail	oort of testing	g with SCAI	MP and SM ₄	ART-T to re	duce risk				
FY 1997 Planned Program: • 878 Continu	rogram: Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk	ntractor supj	oort of testin	g with SCAl	MP and SM.	ART-T to re	duce risk				

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Project D455

Exhibit R-2 (PE 0303142A)

RDT&E BUDGET ITEM JUSTIFICA	FICATION SHEET (R-2 Exhibit)	R-2 Exhibit) DATE	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	COM) D455
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustment to FY 1995	99 <u>5</u> FY 199 <u>6</u> 763 807 763	FY 1997 878	
r 1996) car (FY 1997) since FY 1996 ct Submit	793 -7 763 786	878	
Change Summary Explanation: Funding: FY 96 - (-7) the portion of the program that has been proposed for rescission	sed for rescission		
C. Other Program Funding Summary: Not Applicable			
D. Schedule Profile 1 2 3 4 SMART-T Low Data Rate (LDR) Verification Evaluation Demo with SCAMP Follow-On Test and Evaluation (FOT&E) with SCAMP	FY 1996 1 2 3 X* X*	FY 1997 4 1 2 3 4 X X	
*Denotes Milestone completion			
Project D455	Page 23 of 29 Pages	Exhibit R-2	Exhibit R-2 (PE 0303142A)
	1442		





RDT&E P	PROGRAM ELEMENT		/PROJECT (COST BE	REAKDO	BREAKDOWN (R-3)) (2)	DATE M e	March 1996
BUDGET ACTIVITY 7 - Operational System Development	ım Developmen	t		PE NUMBER AND TITLE 0303142A Satel Ground Environ	AND TITLE A Satelli Environn	e NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ınications CE)	STITLE Satellite Communications (SATCOM) ivironment (SPACE)	РRОЈЕСТ D455
A. Project Cost Breakdown Government Systems Engineering and Project Management Total	n eering and Project Ma	nagement	FY 1995 763 763		FY 199 <u>6</u> 786 786	FY 1997 878 878			
B. Budget Acquisition History and Planning Information	ory and Planning Info	ormation							
Performing Organizations									
Contractor or Contract									
Government Method/Ty Performing or Funding	Method/Type Award or or Funding	Performing Activity	Project Office	Total Prior to				Budget to	Total
Activity Vehicle	le <u>Date</u>	EAČ	EAC	FY 1995	FY 1995	FY 1996	FY 1997	Complete	<u>Program</u>
Product Development Organizations	anizations	110544	112544	112544					113544
Magnavox (F716) FFF	Sen 90	112544	11363	11363					11363
	Mar 90	933	933	933					933
Magnavox (B754) T&M	Apr 92	1126	1126	1126					1126
Govt Support				30699	454	422	480		32055
Lab Activities				4256					4256
Lincoln Labs	:			18949					18949
Support and Management Organizations	Organizations			16125	73	203	210		16614
SS/MSP JMPO				4373	ò	C07	717		4373
Crosslink									
Statistical				3396					3396
Mitre				1527	98				1613
Core Support				67241	156	161	179		67737
Test and Evaluation Organizations Test Support	nizations			24966					24966
Government Furnished Property: Not applicable	nerty: Not applicable								
Project D455			Page	Page 24 of 29 Pages	jes		Exh	Exhibit R-3 (PE 0303142A)	103142A)

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	EAKDO	NN (R-3		DATE Marc	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ND TITLE Satellite	Commu	nications 3E)	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJEC	PROJECT D455
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1995 179870 92662 24966 297498	FY 1995 454 309 763	F <u>Y 1996</u> 422 364 786	FY 1997 480 398 878	Bud	Budget to Complete	Total Program 181226 93733 24966 299925
Project D455	Page 25 of 29 Pages	22		Exhi	Exhibit R-3 (PE 0303142A)	3142A)	
	1444						





	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational	вирсет астіліту 7 - Operational System Development			PE NE 030	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	communi t (SPACE	cations (SATCON		РRОЈЕСТ D456
55	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D456 Tactical Satellite	Tactical Satellite Communications System	3659	4244	4348	4313	4180	4785	0	0	Continuing	Continuing
A. <u>Mission Descripti</u> Communications (GM Department of Defens Intelligence (C31) req	A. <u>Mission Description and Budget Item Justification</u> : Project D456 - Tactical Satellite Communications (TACSATCOM). The Ground Mobile Forces Satellite Communications (GMFSC) for TACSATCOM system provides funds for the development of tactical satellite communications terminals and control systems for the Department of Defense. Developments under this program provide rapid, reliable, effective communications to support tactical Command, Control, Communications and Intelligence (C3I) requirements for tactical commanders and Commanders-in-Chief (CINC).	tion: Proje om provides f ogram provi ders and Con	ct D456 - Ts unds for the de rapid, rel imanders-in	actical Satel developmes iable, effecti -Chief (CIN	llite Communt of tactical ive commun (C).	nications (7 satellite con ications to su	racsarco nmunications pport tactics	M). The G s terminals a	round Mobil ind control s I, Control, C	le Forces Sat ystems for th ommunicatic	ellite te ons and
Acquisition Strategy: development efforts for efforts and implemented utilize the same strategy.	Acquisition Strategy: Multiple engineering and development efforts are associated with acquisition of satellite communications terminals and control systems. Initial development efforts for Over the Air Rekey (OTAR), Demand Assigned Multiple Access (DAMA), and voice recognition will be accomplished via government engine efforts and implemented via Engineering Change Proposal (ECP) on the current Fixed-Price Production Contract. Successive EMUT upgrades are anticipated which w utilize the same strategy.	velopment e), Demand A oposal (ECP	fforts are assessigned Mu on the curr	sociated with Itiple Acces ent Fixed-P	n acquisition s (DAMA), e rice Producti	of satellite c and voice rec ion Contract.	ommunicati ognition wil Successive	ons termina I be accomp EMUT upg	ls and contro lished via go rades are an	efforts are associated with acquisition of satellite communications terminals and control systems. Initial Assigned Multiple Access (DAMA), and voice recognition will be accomplished via government engineering P) on the current Fixed-Price Production Contract. Successive EMUT upgrades are anticipated which will	nitial ngineering ich will
FY 1995 Accomplishments:	nments: Continued P3I on PSC-5 Enhanced Manpack Ultra High Frequency Terminal (EMUT) for OTAR Analysis, (DAMA), and the new 5KHz Waveform Continued P3I on PSC-5 EMUT for voice recognition	anced Manpa UT for voice	ıck Ultra Hi recognition	gh Frequenc	y Terminal (EMUT) for (OTAR Anal	ysis, (DAM	A), and the	new 5KHz W	/aveform
FY 1996 Planned Program:	ogram: Complete P31 on PSC-5 EMUT for OTAR Analysis and voice recognition Continue EMUT 5 KHz DAMA Waveform Improvement Initiate and complete specification development for Super High Frequency (SHF) Tri-Band Advanced Range Extension Terminal (STAR-T) Initiate development of Ultra High Frequency (UHF) Tracking Antenna (SCATS) Task Force XXI SBIR/STTR Revised Economic Assumptions - Not available for execution	JT for OTAR MA Wavefor ation develol High Freque ons - Not ava	Analysis an Improver oment for Suncy (UHF)?	nd voice reconent uper High Fr Tracking An cecution	ognition equency (SF tenna (SCA'	IF) Tri-Band FS)	Advanced I	Range Exten	sion Termin	la]	
Project D456				Page 26 of 29 Pages	°29 Pages			Exhib	Exhibit R-2 (PE 0303142A)	0303142A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	Ho NO		Exhib		DATE	March 1996	96(
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AN 0303142A Ground Er		PENUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	mmunic SPACE)	Satellite Communications (SATCOM)	rcom)	PROJECT D456
 FY 1997 Planned Program: 948 Continue EMUT 5KHz DAMA Waveform Improvement 1000 Continue government and contractor support of STAR-T 900 Continue development and conduct field test for UHF Tracking Antenna (SCATS) 1500 Initiate the development of the Phased Array Prototype Antenna and Advanced Single Channel UHF Manpack study Total 4348 	ent R-T Tracking Anter e Antenna and	nna (SCAT: Advanced S	S) single Cham	nel UHF M	anpack study		
1996)	FY		FV 1997 4465				
Appropriated Amount (FY 1996) Adjustment to FY 1996 Adjustments to Budget Year (FY 1997) since FY 1996 Procident's Budget	. 4	42 <i>87</i> -43	-117				
sudget Submit	3659 47	4244	4348				
Change Summary Explanation: Funding: FY 95: Funds (-3071) were reprogrammed to D386 for higher priority require FY 96: (-43) the portion of this program that has been proposed for rescission FY97: (-117) reduction due to revised inflation rates	86 for higher priority requirements. been proposed for rescission ites	uirements. .ion					
C. Other Program Funding Summary	FV 1007	EV 1008	EV 1000	EV 2000	EV 2001	To	•
		0 7084 14821	7099 33587	4074 4074 41950	7 1 2001 0 4046 79864	Cont 277641	0 60226 1t Cont 1 456997
Project D456	Page 27 of 29 Pages) Pages			Exhibit R-:	Exhibit R-2 (PE 0303142A)	(1
	1446						





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJECT COM) D456
D. <u>Schedule Profile</u> 1 2 3 4 1	FY 1996 2 3 4 1 2 3 4	
f.		
Project D456	Page 28 of 29 Pages	Exhibit R-2 (PE 0303142A)
	1447	

DT&E PROGRAM ELEMENT/P	ROJECT COST BREAKDOWN (R-3)	30WN (R-3)	DATE March 1996	10
вирдет астічіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	Satellite Communications (SATCOM)		PROJECT D456
A. Project Cost Breakdown Development Support Equipment Acquisition Contractor Engineering Support Government Engineering Support Program Management Support Total	FY 1995 FY 1996 2082 2367 452 400 582 916 543 561 3659 4244	FY 1997 2669 479 591 609 4348		
B. Budget Acquisition History and Planning Information: Not Applicable				
Project D456	Page 29 of 29 Pages	Exhib	Exhibit R-3 (PE 0303142A)	
				Secure description of the security of the secu



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE M	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	t		PE NI 030 Sys	PE NUMBER AND TITLE 0303150A Army System (AGCCS)	⊓⊓∟E krmy Glol CCS)	bal Comr	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	Control		PROJECT DC86
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DC86 Army Global Command and Control System	0	0	19804	15088	14808	9566	4743		9500	73509

A. <u>Mission Description and Budget Item Justification</u>: Project DC86 - AGCCS: This project is the Army component system that directly supports the implementation of the Joint Global Command and Control System (GCCS). This support is being accomplished through the Army's Global Command and Control System (AGCCS) which STACCS foundation applications and additional software functionality developed under the Army WWMCCS Information System (AWIS) and the AGCCS will provide a involves the development, enhancement and integration of software functionality that currently exists within the Army's inventory or is currently under development and is layered architecture and functional best-of-breed software applications to develop a totally integrated component of the Global Command and Control System. This project therefore appropriately included in Budget Activity 7. This is not a new start. Prior to FY 97, funding for this program was provided under Program Element 0203740A, identified the Standard Theater Army Command and Control System (STACCS) as the foundation for the Army Global Command and Control System (AGCCS). Using is a selection of the Army's best of breed command and control functionality. The AGCCS-developed software systems will dramatically improve the Army's ability to analyze courses of action; develop and manage Army Forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. The Army has Project DC49, Standard Theater Army Command and Control System.

Firm-Fixed-Price) contract was awarded to Lockheed Martin Corporation (LMC) in December 1994. The contract consists of software development, software maintenance Acquisition Strategy: The AGCCS software integration and development effort is a 5 year incrementally funded completion effort. A hybrid (Cost-Plus-Award Fee and and relocation/de-installation of the test facility. The development strategy includes 10 Capability Packages (CPs). CPs #1 and #2 include conversion of existing products functionality. All even numbered CPs will be for fixes or upgrades to odd numbered CPs, if required. After delivery and testing of each new functionality (CPs 3,5,7,9) it will be determined if system upgrades (CPs 4,6,8,10) are needed. A common hardware platform will be used within the Army to implement AGCCS/GCCS. This will include products from the Army's Common Hardware/Software-II (CHS-II) contract and will include equipment and basic Commercial off the Shelf (COTS) software to GCCS and development of the Common Operating Environment (COE). Beginning with CP #3, all odd numbered CPs represent development of prime mission packages. The COTS hardware and software will provide Reduced Instruction Set Computer (RISC) based machines with expanded processing, storage and communications capability as well as office-automation and management software.

FY 1995 Accomplishments: Program not funded in FY 1995

FY 1996 Planned Program: Program not funded in FY 1996

Page 1 of 4 Pages

Project DC86

Exhibit R-2 (PE 0303150A)

RDT&E BUDGET ITEM JUST	FICATION SHEET (R-2 Exhibit) DATE	March 1996
вирвет АСТИИТУ 7 - Operational System Development	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	PROJECT Itrol DC86
FY 1997 Planned Program: 1636 Perform Systems Engineering 12511 Continue Prime Mission Software Development - Capability Package #7 644 Perform Data Engineering 93013 Conduct Systems Test and Evaluation - Capability Package #5 2000 Perform Program Support and Management Efforts Total 19804	Package #7 45	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Adjustments to FY 1996)	FY 1996 FY 1997 0	
Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget Current President's Budget Submit	19804	
Change Summary Explanation: Funding: FY 97 (+8143) moved from PE 0203740A, Project DC49 and additional (+11661) added to support accelerated software development Schedule: Additional funding allows the Army to remain in lock step with the implementation of the Joint Global Command and Control System (GCCS)	dditional (+11661) added to support accelerated software dev n the implementation of the Joint Global Command and Contro	elopment I System (GCCS).
C. Other Program Funding Summary Procurement OPA-2 BA8250 Std Theater Army Cmd & Contr System 13008 14071	FY 1997 FY 1998 FY 1999 FY 2000 FY 2001 20462 17788 25193 14078 9379	To Total Complement Cost 84000 197979
D. Schedule Profile FY 1995	FY 1996 FY 1997 2 3 4	
)	o ×	
Project DC86	Page 2 of 4 Pages	Exhibit R-2 (PE 0303150A)





RD	RDT&E PROGRAM ELEMENT/	3RAM EL	EMENT/PF	PROJECT (COST BI	REAKDO	COST BREAKDOWN (R-3)	3	DATE March	March 1996	
BUDGET ACTIVITY 7 - Operational System Development	l System Do	evelopmen	ıt		PE NUMBER AND TITLE 0303150A Arm) System (AGCCS	PE NUMBER AND TITLE 0303150A Army System (AGCCS)	Global Co	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	d Control	PROJECT DC86	ЭСТ 6
A. Project Cost Breakdown Systems Engineering Prime Mission - Software Development Data Engineering System Test and Evaluation Support and Management Total	reakdown g ftware Developn aluation ement	nent		FY 1995		FY 1996	FY 1997 1636 12511 644 3013 2000 19804				
B. Budget Acquisition History and Planning Information	tion History an	d Planning In	<u>formation</u>								
Performing Organizations Contractor or Contract Government Method/Type Awar Berforming or Funding Oblig Activity Vehicle Date Product Development Organizations LMC C/CPAF/FFP DEC COE Support TBD TBD TBD Support and Management Organizations FEDSIM MIPR MITRE C/FFP OCT Test and Evaluation Organizations CECOM - IV&V MIPR	izations Contract Method/Type or Funding Vehicle ent Organizatio C/CPAF/FFP MIPR TBD ngement Organi MIPR C/FFP On Organization	Award or Obligation Date ons DEC 94 TBD izations OCT 92	Performing Activity EAC TBD TBD	Project Office <u>EAC</u> TBD TBD	Total Prior to FY 1995 0 0 0 0	FY 1995 0 0 0 0	FY 1996 0 0 0 0	FY 1997 15034 500 0 1200 800 1570	Budget to Complete 19530 3800 12300 1600 1600		Total 34564 4300 12300 2400 5545
Project DC86				Pay	Page 3 of 4 Pages	es		Exhit	Exhibit R-3 (PE 0303150A)	50A)	

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	AKDO	WN (R-3		DATE March	1 1996	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303150A Army System (AGCCS)	Army G GCCS)	slobal Co	TITLE Army Global Command and Control GCCS)	nd Control		ВСТ 36
Government Furnished Property Contract Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property LMC - GFE MIPR HW/SW Support and Management Property: None Test and Evaluation Property: None	Total Prior to FY 1995 E	FY 1995 0	FY 1996 0	FY 1997 700	Budget to Complete 2900		Total Program 3600
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				16234 2000 1570 19804	3.6 1.1 2.3 5.3 5.3	38530 11200 3975 53705	54764 13200 5545 73509
Project DC86	Page 4 of 4 Pages			Exhi	Exhibit R-3 (PE 0303150A)	50A)	
	1452						
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE N	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	ب		PE NI 030	E NUMBER AND TITLE 3305128A Secu	E NUMBER AND TITLE 0305128A Security and Intelligence Activities	and Intell	igence A	ctivities	d 4	Р R ОЈЕСТ H12
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
H12 Intelligence Support to Force XXI	0	0	487	485	626	933	927		3771	3771

and Artificial Intelligence), networks which link tactical and high speed wide area capabilities (utilizing asynchronous transfer mode (ATM), syncrous optical net (SONET) high speed analytical and graphical processing, computer software for distributed tactical or simulation environments (including tools such as Knowledge Based Reasoning integrated into live, virtual or constructive environments. These critical technology areas include: Displays (public, cockpit and heads-up), computer hardware capable of Automatic Target Recognition (ATR) and Assisted Target Recognition (ATTR) for timeline reductions. This project supports development of new operational concepts and multi-level security capabilities) throughout all echelons, Sensors for real-time information of the battlefield throughout the electromagnetic spectrum, the Dynamic limitations of Intelligence XXI technologies which supports Force XXI. This requires a comprehensive understanding of the following seven critical technologies when A. Mission Description and Budget Item Justification: This program element provides funding to develop proof of concepts to define fundamental capabilities and Visualization Databases for live or synthetic environment (including terrain, features, texture, images, weather, environment, entities and units as a minimum), and the efforts in the intelligence arena and is therefore appropriately funded in Budget Activity 7.

technologies into these infrastructures to leverage current and evolving capabilities for evaluation. However, this integration process will occur in a building block approach utilizing lessons learned. An initial technology proof of concept which looks promising will continually be integrated into more complex environments-ultimately integrated Project H12 - Intel XXI Technology Proof of Concept and Force XXI Integration: This project consists of continuing series of Intel XXI technology proof of concepts designed to address fundamental issues within each of the above seven critical technology areas. These results provide the basis for integrating the technologies into all echelons in either tactical or simulation environment. For this methodology to work, existing infrastructures will be utilized. This will require integration of these into Force XXI exercises. Technical support will be required at all stages from individual proofs of concepts to exercise integration.

integration support. Major integrated proofs of concepts, with the 525th Military Intelligence Brigade as the user, will occur on a quarterly basis. Major milestones in FY97 Acquisition Strategy: Utilize existing INSCOM, Joint Precision Strike Demonstration and Advanced Research Project Agency contracts to obtain hardware and software are XVIII ABC exercises (November 1996, May 1997 and September 1997) and Troop Force XXI AWE (Feb 1997).

FY 1995 Accomplishments: Project not funded in FY 1995

FY 1996 Planned Program: Project not funded in FY 1996

FY 1997 Planned Program:

487 Continue Proofs of Concepts with quarterly integration test

Total 487

Project H12

Page I of 3 Pages

Exhibit R-2 (PE 0305128A)

RDT&E BUDGET ITEM JUSTI			FICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	A CONTRACTOR OF THE CONTRACTOR	PE NUMBER AND TITLE 0305128A Secu	PENUMBER AND TITLE 0305128A Security and Intelligence Activities	PROJECT
B. Project Change Summary	FY 1995	FY 1996	FY 1997	ind space software in the land of the land
Previous President's Budget	N/A	N/A	500	
Appropriated Value	N/A	N/A		
Adjustments to Appropriated Value	N/A	N/A	-13	
Current Budget Submit/President's Budget	N/A	N/A	487	
Change Summary Explanation: Funding: FY97 revised inflation rate adjustment (\$13)				
C. Other Program Funding Summary: Not Applicable				
D. Schedule Profile: Proofs of Concept/Integration of prototypes for distributed control and visualization of intelligence information over commercial ATM and tactical	s for distributed	control and visus	lization of intelligence information ov	r commercial ATM and tack

D. Schedule From: Froots of Concept meglation of prototypes for distributed control and visualization of intelligence data for collaborative situational awareness.

FY 1996

FY 1997

1 2 3 4 1 2 3 4

Proofs of Concepts

Page 2 of 3 Pages

Project H12

Exhibit R-2 (PE 0305128A)





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BREAKD	OWN (R-3)	DATE March 1996	ဖွ
вирсет Астіvітy 7 - Operational System Development	PE NUMBER AND TITLE 0305128A Secu	D TITLE Security and Intelligence Activities		PROJECT H12
A. Project Cost Breakdown Primary Hardware Development Software Development Developmental/Operational Test Integrated Logistics Support Total	FY 1995 FY 1996	FY 1997 95 195 147 50 487		
B. Budget Acquisition History and Planning Information: Not Applicable	υ			
Project H12	Page 3 of 3 Pages	Exh	Exhibit R-3 (PE 0305128A)	

BUDGET ACTIVITY 7 - Operational System Development		2		RUIGE BUUGEI IIEM JUSTIFICATION SHEET (R-2 EXNIDIT)	010			March 1996	ဖ
		PE NU 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	nnte Iultiple L rovemen	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy: m	stem		and the second s
COST (In Thousands) FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
Total Program Element (PE) Cost 57814	70603	64271	14617	0	0	12361		0	Continuing
D027 Improved Launcher Mechanical System 2897	19253	27038	14617	0	0	0		0	63805
D050 Improved Fire Control System 34068	33506	26324	0	0	0	0		0	139522
D054 Extended Range Rocket 20849	17844	10909	0	0	0	0		0	89435
D090 MLRS HIMARS 0	0	0	0	0	0	12361		0	Continuing

Rocket (ER-MLRS), Improved Fire Control System (IFCS), and Improved Launcher Mechanical System (ILMS). The ER-MLRS project will enhance the capability of the Multiple Launch Rocket System (MLRS). The Product Improvement Program (PIP) provides for the Engineering and Manufacturing Development of an Extended Range decrease the stow to aim point timeline and enhance effectiveness in countering surface to surface missile fire. These projects support development of upgrades to current Mission Description and Budget Item Justification: Expanding Regional Power Threats require an evolutionary improvement program to maintain the effects of the production vehicles and are appropriately funded in Budget Activity 7. Budget Activity 7 includes R&D effort directed toward development, engineering, and test of existing MLRS by providing improvements in range, accuracy and effectiveness and maneuver force safety (self-destruct fuze). The IFCS corrects present and future addition of built-in test equipment and will provide growth capabilities for existing and future MLRS Family of Munitions (MFOM) weapon systems. The ILMS will supportability problems resulting from electronic component obsolescence in the existing design. This effort will result in reduced operation and support cost due to changes to fielded systems or systems already in procurement which alter the performance envelopes and may include operational test and evaluation costs.

Page 1 of 15 Pages

Exhibit R-2 (PE 0603778A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	FION S	HEET (R	2-2 Exhil	bit)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	.		PE NI 0 90	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System	TITLE Aultiple L	aunch R	ocket Sy	stem	. 	Р ROJECT D027
			Pro	Product Improvement Program	rovemen	າt Progra	E			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D027 Improved Launcher Mechanical System	2897	19253	27038	14617	0	0	0		0	63805

Manufacturing Development (EMD) of the Improved Launcher Mechanical System (ILMS). The ILMS will decrease the stow to aim point timeline, enhance effectiveness from 93 seconds to 16 seconds. Reload operations for twelve rockets will be reduced from 260 seconds to 160 seconds. These improvements will allow faster engagement in engaging and supporting the force, and increase MLRS platform survivability. ILMS, as a modification to the MLRS M270 Launcher, will replace selected components of the launcher mechanical drive system. The time required for movement of the Launcher Loader Module from the stowed position to first rocket away will be reduced of short dwell time targets and increase crew survivability on the firing point and reload area. Reduced operation and support costs are expected with the design. When A. Mission Description and Budget Item Justification. Project D027 - Improved Launcher Mechanical System: This project provides the Engineering and combined with the Improved Fire Control System Modification, the launcher will be designated as M270A1.

Acquisition Strategy: This is an ACAT III program with a 38-month EMD phase ending in FY 98 and retrofits beginning in FY 00. A sole source contract for EMD was awarded to Loral Vought Systems (LVS) in August 95.

FY 1995 Accomplishments:

- Initiate and Develop Product Team Design
 - Initiate and Develop Trade Studies 1642
 - Minor Tasks Including In-House 397 2897
 - Total

FY 1996 Planned Program:

- Hardware & Software Design 9//91
- GFE Retrofit Kits 500
- Minor Tasks Including In-House 1493
- Revised Economic Assumption not Available for Execution
 - SBIR/STTR

Project D027

Page 2 of 15 Pages

Exhibit R-2 (PE 0603778A)

RDT&E BUDGET ITEM JUSTI	FICATION		FICATION SHEET (R-2 Exhibit) DATE	re March 1996
вирбет Астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	PROJECT IM D027
 FY 1997 Planned Program: 22726 Software Development Qualification, H/W De 125 System Integration 1075 GFE Launcher Modifications 3112 Minor Tasks Including In-House Total 27038 	olivery, Qualifi	elivery, Qualification & System Testing	Testing	
B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995)	FY 1995 2959 2897	FY 1996 15994	F <u>Y 1997</u> 21545	
Adjustments to FY 1995 Appropriated Value Appropriated Amount (FY 1996) Adjustments to FY 1996 Appropriated Value Adjustments to Budget Year (FY 1997) since		19448 -195	5493	
FY 1996 President's Budget Current President's Budget Submission	2897	19253	27038	
Change Summary Explanation: Funding: FY 96: Revised Economic Assumption (-195). modification with ILMS and IFCS (+5493).		g was increased t	FY 97 funding was increased to accelerate the ILMS program, enabling concurrent launcher	concurrent launcher
Project D027	Pag	Page 3 of 15 Pages	Exhibit R	Exhibit R-2 (PE 0603778A)
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RDT&E BUDGET ITEM JUS	EM JUS	LIFICA	TIFICATION SHEET (R-2 Exhibit)	EET (R	-2 Exhib	oit)	DATE	TE March 1996	1996	
BUDGET ACTIVITY 7 - Operational System Development			PE NUI 060; Proc	PE NUMBER AND TITLE 0603778A Multi Product Improv	пле ultiple La rovemen	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PENUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	E	PROJECT D027	.cт
C. Other Program Funding Summary	FY 1995	<u>FY 1996</u>	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete		l'otal <u>Cost</u>
Missile Procurement, Army BUDGET ACT 2: MLRS RKT (C65401) MLRS LAUNCHER (C65900) ER-MLS (C65402)	25917 141648 0	0 95092 44607	0 38039 24443	0 0 44300	0 0 47308	0 0 46896	0 0 52743	33	0 358 0 204 CONT C	3580410 2042197 CONT
MLRS MODS (C67500)	29289	17476	6416	45252	67459	117168	162622	22	CONT	CONT
BUDGET ACT 4: MLRS INITIAL SPARES (CA0257) MLRS MOD SPARES (CA0265)	12066 1269	5077 2051	0	0 4307	0 4179	0 5654	0 5505	22	0 15 CONT C	159017 CONT
D. Schedule Profile	FY 1995 2 3	4	F)	FY 1996 2 3	4	FY 1997 2 3	7 4			uni e este escribito delectros
MSII SYSTEM REQ REV/SYSTEM DES REV PRELIMINARY DESIGN REV (PDR) CRITICAL DESIGN REV (CDR) ENGINEERING DEV TEST (EDT) ROAD TESTS OPERATIONAL TESTS MSIII A CONTRACT COMPLETE		*	*	×	×	×				
*Milestone Complete										
Project D027			Page 4 of 15 Pages	5 Pages			Exhibit R	Exhibit R-2 (PE 0603778A)	8A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT C	OST BR	EAKDC	WN (R-		DATE Ma	March 1996	
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0603778A Multi Product Improv	ND TITLE A Multip	PENUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PENUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	tem	A Q	РRОЈЕСТ D027
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support Miscellaneous Total	EY 1995 2500 397 2897	EY 1996 17276 1516 406 55 19253	<u>7 1996</u> 17276 1516 406 55 19253	EY 1997 23801 2822 365 50 27038				
B. Budget Acquisition History and Planning Information								See al
Performing Organizations Contractor or Contract Government Method/Type Award or Performing P Performing or Funding Obligation Activity (Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	M OI	Budget to Complete	Total <u>Program</u>
LVS CPIF AUG 95			2500	16776	22726		8605	20607
Support and Management Organizations MLRS Project Off RDEC-MICOM			263 134	839	1753 1119		1310	4165 2967
Lest and Evaluation Organizations Range Support Other Test Act				110	20 345		900 295 400	1030 936 400
Project D027	Page	Page 5 of 15 Pages	Si		Exhibit	Exhibit R-3 (PE 0603778A)	303778A)	en e





RDT&E PROGRAM ELEMENT/F	PROJECT	COST BREAKDOWN (R-3)	VN (R-3) DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	Launch ent Prog	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	.	РRОЈЕСТ D027
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Date Product Development Property LVS CPIF Aug 95 Support and Management Property: None Test and Evaluation Property: None	Total Prior to FY 1995	FY 1995	FY 1996 500	FY 1997 1075	Budget to Complete 2125	Total Program 3700
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1995	FY 1995 E 2500 397 2897	FY 1996 17276 1571 406 19253	FY 1997 23801 2872 365 27038	Budget to	Total Program 54307 7132 2366 63805
Project D027	Page 6 of 15 Pages	SS		Exhibit R-3 (PE 0603778A)	E 0603778A)	
	1461					

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		TECA	S NO		2 Exhi			DATE	March 1996	ဖွ
BUDGET ACTIVITY 7 - Operational	зирдет Астіvіту 7 - Operational System Development	entre constante e se sense de la constante de	THE PROPERTY OF THE PROPERTY O	PE NE 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	IITLE Iultiple L Irovemer	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy m	stem	<u>d</u> .	PROJECT D050
)O	COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D050 Improved Fire Control System	ontrol System	34068	33506	26324	0	0	0	0		0	139522
A. Mission Description a position data, communicat the weapon. This project future supportability probladdition of built-in test equample.	A. Mission Description and Budget Item Justification. Project D050 - Improved Fire Control System (IFCS): The current MLRS Fire Control System provides position data, communication interface through which fire missions are received, processes data, controls the launcher, inputs mission critical data to the weapons and fires the weapon. This project provides for the Engineering and Manufacturing Development (EMD) of an Improved Fire Control System (IFCS) which will correct present and future supportability problems resulting from electronic component obsolescence in the existing design. This effort will result in reduced operation and support costs due to addition of built-in test equipment (BITE) to the circuit card and cable level and will provide growth capabilities for existing and future MLRS Family of Munitions (MFOM) weapon systems.	ttion. Project fire mission of and Manu onic componential card and	ect D050 - I	Project D050 - Improved Fire Control System (IFCS): missions are received, processes data, controls the launcher Manufacturing Development (EMD) of an Improved Fire (mponent obsolescence in the existing design. This effort w d and cable level and will provide growth capabilities for ex	re Control es data, con (EMD) of a existing desi	System (IFC trols the laur Improved gn. This eff capabilities	SS): The curcher, inputs Fire Control ort will resul for existing	rent MLRS mission crii System (Fe t in reduced	Fire Contro ical data to CS) which v operation a	The current MLRS Fire Control System provides, inputs mission critical data to the weapons and ficontrol System (IFCS) which will correct present ill result in reduced operation and support costs dixisting and future MLRS Family of Munitions	vides and fires ssent and sts due to
Acquisition Strateg awarded to Loral Vo due to the mechanica for systems and perfi computer software m	Acquisition Strategy: This is an ACAT III program with a sixty month EMD phase ending in FY 97 and retrofits beginning in FY 00. A sole source contract was awarded to Loral Vought Systems (LVS) in September 1992. Sole source was determined necessary due to the integration of the IFCS into the existing MLRS design, and due to the mechanical, electrical, and software interface with all rockets, missiles, and munitions utilizing the MLRS launcher. It is essential that the source be responsible for systems and perform the interface/design efforts for integrating the IFCS into the MFOM. Also, as an internationally, co-developed and co-produced system, the computer software must have common application to that utilized by the sponsor countries.	m with a sixt ber 1992. Sc face with all for integration o that utilize	y month EN ole source w rockets, mis ng the IFCS d by the spo	1D phase en as determine siles, and m into the MF nsor countri	ding in FY 9 and necessary unitions utili OM. Also, es.	7 and retrof due to the ii zing the ML as an interna	its beginning ntegration of RS launcher tionally, co-	the IFCS in the is essentially the interpretation that is the interpretation of the interpretation in the	A sole sour to the existi tial that the nd co-prodt	y month EMD phase ending in FY 97 and retrofits beginning in FY 00. A sole source contract was le source was determined necessary due to the integration of the IFCS into the existing MLRS desig ockets, missiles, and munitions utilizing the MLRS launcher. It is essential that the source be respong the IFCS into the MFOM. Also, as an internationally, co-developed and co-produced system, the by the sponsor countries.	ign, and ponsible he
FY 1995 Accomplishments:	hments: System EDT Integration, Subsystem EDT Software Development Launcher Pool Maintenance Minor Tasks Including In-House	system EDT use	and Final L	and Final LRU Design Activities	Activities						
FY 1996 Planned Program:	rogram: Engineering Development Test of Hardware, System Integration Test & Subsystem Level Qualification Test Redstone Technical Test Center (RTTC) Environmental Qualification Testing FCP Trainer Development Minor Tasks Including In-House Revised Economic Assumption not Available for Execution SBIR/STTR	st of Hardwe ter (RTTC) F use on not Availe	ire, System snvironment snvironment	integration 1 al Qualifica cution	Cest & Subsy tion Testing	stem Level	Qualification	ı Test			



Page 7 of 15 Pages

Project D050

Total

Exhibit R-2 (PE 0603778A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R		DATE March 1996	1996
вирдет Астімту 7 - Operational System Development	PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	stem	PROJECT D050
 FY 1997 Planned Program: 17726 System Integration Tests, Flight Tests, Extended System Integration Tests 6000 EMD Contract Award Fee 530 White Sands Missile Range (WSMR) Test & Software 2068 Minor Tasks Including In-House Total 	tegration Tests			
B. Project Change SummaryFY 1995Previous President's Budget (FY 1996)34799Appropriated Amount (FY 1995)34068	FY 1996 34448	FY 1997 14957		
Adjustments to FY 1995 Appropriated Value Appropriated Amount (FY 1996) Adjustments to FY 1996 Appropriated Value Adjustments to Budget Year (FY 1997) since	33845 -339	11367		
Fr 1990 Fresident's Budget Submission 34068	33506	26324		
Change Summary Explanation: Funding: FY 96: Revised Economic Assumption (-339). FY 97: IFCS EMD Award Fee/ Facilitate integration of Wind Measurement Device (WMD) into the IFCS Modification (+11367).	EMD Award Fee/	Facilitate integration of Wind Measun	ement Device (WN	AD) into the
				·
Project D050	Page 8 of 15 Pages	Exhib	Exhibit R-2 (PE 0603778A)	78A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	97 =	Z L L S L	S NO		2 Exhit	(1)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	THE OF THE PROPERTY OF THE PRO		PE NL 060	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	ITLE Iultiple La rovemen	aunch Re t Prograi	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	tem	<u>a</u>	PROJECT D050
B. Project Change Summary	FY 1995	FV 1996	FY 1997	FV 1998	FY 1999	FV 2000	FV 2001	Merchanistic sensitivativativativativativativativativativ	To To	Total
Missile Procurement, Army						2007	1007 4 4		and the second	100
MLRS RKT (C65401)	25917	0	0	0	0	0	0		0	3580410
MLRS LAUNCHER (C65900) ER-MLRS (C65402)	141648 0	95092 44607	38039 24443	0 44300	0 47308	0 46896	0 52743		0 CONT	2042197 CONT
BUDGET ACT 3:	Oacoc	7000	2416	03034	03450	11110	10000		EL COO	
MLKS MODS (C6/300) BUDGET ACT 4:	69767	1/4/0	0410	43737	0/439	11/168	779791		CONT	CONI
MLRS INITIAL SPARES (CA0257) MLRS MOD SPARES (CA0265)	12066 1269	5077 2051	0 1831	0 4307	0 4179	0 5654	0 5505		0 CONT	159017 CONT
D. Schedule Profile	FY 1995	-		FY 1996	-	FY 1997	70			
PDR* H/W CDR* S/W CDR INTEGRATION LAB OPER SYS INTEGRATION TEST TEST FIRINGS MS III A CONTRACT COMPLETE * Milestone Complete.	* * * 1		n			×				
Project D050			Page 9 of 15 Pages	15 Pages			Exhibit	R-2 (Pi	Exhibit R-2 (PE 0603778A)	
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RDT&E PROGRAM ELEMENT/PRO	PROJECT C	OST BF	REAKDO	COST BREAKDOWN (R-3)	3) БАТЕ	E March 1996	9(
BUDGET ACTIVITY 7 - Operational System Development	<u>-</u>	PE NUMBER AND TITLE 0603778A Multi Product Improv	AND TITLE A Multip Improve	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	ס זודוב Multiple Launch Rocket System provement Program		РRОЈЕСТ D050
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support	FY 1995 32253 1391 424 34068	FY 1996 28648 4168 690 33506	<u>7 1996</u> 28648 4168 690 33506	EY 1997 23726 2068 530 26324			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Product Development Organizations LVS CPIF SEP 92		35452	32253	28648	23726		120079
Support and Management Organizations MLRS Project Off RDEC-MICOM		3467 4646	890 501	1989 2179	1005 1063		7351
Test and Evaluation Organizations Develop Test Spt Total		263 43828	424 34068	690 33506	530 26324		1907 137726
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Date		Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
SEP 92 GFE Support and Management Property: None Test and Evaluation Property: None		1796					1796
Project D050	Page .	Page 10 of 15 Pages	ies		Exhibit R-	Exhibit R-3 (PE 0603778A)	

JT&E PROGRAM ELEMENT/P	ROJECT COST BREAKDOWN (R-3)	AKDO	NN (R-3		DATE	March 1996	40
вироет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	DTITLE Multiple Iprovem	Launch ent Prog	Rocket Sy ram	stem	Д	PROJECT D050
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1995 FN 37248 8113 263 45624	FY 1995 32253 1391 424 34068	FY 1996 28648 4168 690 33506	FY 1997 23726 2068 530 26324		Budget to Complete	Total 121875 15740 1907 139522
Project D050 Pc	Page 11 of 15 Pages			Exhil	oit R-3 (P	Exhibit R-3 (PE 0603778A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE	March 1996	9
BUDGET ACTIVITY 7 - Operational System Development	1 1		PE NO 060	E NUMBER AND TITLE 0603778A Multi	птс Multiple L	aunch R	0603778A Multiple Launch Rocket System	tem	. ப	РРОЈЕСТ D054
			2	rioduct iiiipioveiiieiit riogiaiii	Overner	ıtrıogra	-			
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
D054 Extended Range Rocket	20849	17844	10909	0	0	0	0		0	89435

Development (EMD) of an Extended Range Rocket (ER-MLRS) for the Multiple Launch Rocket System (MLRS). The rocket will enhance the capability of the existing A. Mission Description and Budget Item Justification Project D054 - Extended Range -MLRS: This project provides for the Engineering and Manufacturing MLRS by providing improvements in range, accuracy, effectiveness, and maneuver force safety (improved submunitions with self destruct fuze). Acquisition Strategy: The ER-MLRS acquisition strategy is a streamlined product improvement program which permits entering Low Rate Initial Production (LRIP) then measurement device (WMD) and a no-load detent system to sustain accuracy at increased ranges. The acquisition alternative most advantageous to the Government was for Full-Scale Production, after completion of a 57 month EMD program. The primary objective of the EMD phase is to develop and qualify a successor rocket to the MLRS results of other development efforts for a modified submunition (a derivative of the basic submunition, but including a self-destruct fuze) to reduce the dud rate, a wind basic M77 with extended range capability and with minimum impact on existing basic MLRS companion hardware and software. This effort will also incorporate the a sole source EMD contract to the system prime contractor, LVS, containing a requirement to increase subcontract competition for subsystems and components.

FY 1995 Accomplishments:

- Class Loader SW Code/Test & V6 Software Integration/Test WMD-SW Code/Test EDT Units
 - 7558
 - XM451 Fuze Qualifications 480
 - SDF Development 639
- Minor Tasks Including In-House and Preparation for MDR 1494

Ballistic Flight Tests

1074

20849

1467

Page 12 of 15 Pages

Project D054

Exhibit R-2 (PE 0603778A)

	RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit)	DATE	March 1996
BUDGET ACTIVITY 7 - Operational	ıрдет АСТІVITY - Operational System Development	PE NUMBER AND TITLE 0603778A Multi Product Improv	PENUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	PROJECT D054
FY 1996 Planned Program:	'rogram: WMD Integration and Preproduction Qualification Test Complete Ballistic Algorithm Flight Test Fuze Development Software Design Integration Minor Tasks Including In-House and Milestone Decision Review IIIA Preparation Revised Economic Assumption not Available for Execution SBIR/STTR	Review IIIA Prepar	ation	
FY 1997 Planned Program:	rogram: WMD Integration Software Integration & Test Fuze Development Software IV & V Testing and Audits Minor Tasks Including In-House and Milestone Decision Review III Preparation	Review III Prepara	tion	
B. Project Change Summary Previous President's Budget (FY Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Amount (FY 1996)	B. Project Change Summary Previous President's Budget (FY 1996) Appropriated Amount (FY 1995) Adjustments to FY 1995 Appropriated Value Annount (FY 1996)	FY 1996 18344 18024	<u>FY 1997</u> 17195	
Adjustments to FY 1996 Appre Adjustments to Budget Year (F FY 1996 President's Budget	Adjustments to FY 1996 Appropriated Value Adjustments to Budget Year (FY 1997) since FY 1996 President's Budget	-180	-6286	
Current Budget Estimate Submission	imate Submission 20849	17844	10909	
Change Summary Explanation: Funding: FY 95: Fun was transferred to the N	ding increased to satisfy ER-MLRS ALRS-IFCS Program to facilitate in	ract requirements (+ WMD into the IFC	EMD Contract requirements (+1226). FY 96: Revised Economic Assumption (-180), FY 97: Funding iegration of WMD into the IFCS Modification (-6286).	, FY 97: Funding
Project D054	P	Page 13 of 15 Pages	Exhibit R-2 (PE 0603778A)	3778A)
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	TIFICATION SHEET	EET (R	(R-2 Exhibit)	oit)	DATE	E March 1996	96
BUDGET ACTIVITY 7 - Operational System Development			PE NU 060 ; Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	пте Iultiple La rovemen	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	E	PROJECT D054
C. Other Program Funding Summary	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To <u>Complete</u>	Total <u>Cost</u>
Missile Procurement, Army BUDGET ACT 2: MLRS RKT (C65401) MLRS LAUNCHER (C65900) ER-MLRS (C65402)	25917 141648 0	0 95092 44607	0 38039 24443	0 0 44300	0 0 47308	0 0 46896	0 0 52743	0 0 CONT	3580410 2042197 CONT
BUDGET ACT 3: MLRS MODS (C67500)	29289	17476	6416	45252	67459	117168	162622	CONT	CONT
BUDGET ACT 4: MLRS INITIAL SPARES (CA0257) MLRS MOD SPARES (CA0265)	12066 1269	5077 2051	0 1831	0 4307	0 4179	0 5654	0 5505	CONT	159017 CONT
D. Schedule Profile	FY 1995 2 3	4	F 7	FY 1996 2 3	4	FY 1997 2 3	7 4 4		
S/W PDR/CDR BEGIN INITIAL FLT TEST H/W CDR BALLISTIC ALGO TEST FCS FQT PPQT MSIII A IFCS RKT MGR FQT CONTRACT COMPLETE		××	×	×		×	×		
*Milestone Complete.									
Project D054			Page 14 of 15 Pages	15 Pages			Exhibit R	Exhibit R-2 (PE 0603778A)	

RDT&E PROGRAM ELEMENT/PI	ROJECT COST BREAKDOWN (R-3)	SOST BI	ZEAKD	JWN (R.	3) DATE	THE STATE OF THE S	March 1996	The second state of the second state of the second
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0603778A Multi Product Improv	AND TITLE A Multip Improve	PENUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PENUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	M	PRC	РКОЈЕСТ D054
A. <u>Project Cost Breakdown</u> Contractor Engineering Support Program Management Support Developmental Test Support Total	EY 1995 18281 1494 1074 20849	EY 1	FY 1996 12768 2876 2200 17844	EX 1997 6239 2522 2148 10909				
B. Budget Acquisition History and Planning Information								and find memory following the minimizer
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office <u>EAC</u>	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Bud	Budget to Complete	Total <u>Program</u>
LVS CPIF DEC 92 LVS CPIF SEP 92 KDI CPIF JUN 93		14830 14345 3010	9604 7558 1119	4200 6500 2068	3162 2100 977			31796 30503 7174
Support and Management Organizations MLRS Project Off RDEC-MICOM Test and Evaluation Organizations		1901 3972	731 763	1401 1475	1135 1387			5168 7597
Develop Test Spt Total Project		1775 39833	1074 20849	2200 17844	2148 10909			7197
Government Furnished Property Not Applicable.								
Project D054	Page	Page 15 of 15 Pages	ges	-	Exhibit R-	Exhibit R-3 (PE 0603778A)	778A)	and the special state of the s
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA'	TION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE M	March 1996	9
вирдет Астіуітү 7 - Operational System Development	ţ		PE NU 070 Mar	PE NUMBER AND TITLE 0708045A Arm) Manufacturing	ENUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	ıstrial Pr	eparedne	SS	<u>a</u> •	PROJECT DE25
COST (In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
DE25 Mfg Science and Technology	0	27927	16842	17152	17253	17998	18638		Continuing	Continuing Continuing

A. Mission Description and Budget Item Justification: This program element supports the Manufacturing Science and Technology Program (MS&T). The goals of the was realigned from Program Element 0603771A. This program element is assigned to Budget Activity 7 since it includes projects that support development of processes in technology to the industrial base. In the current environment, the MS&T program is even more important than in past years because of the large decline in weapon system manufacturing issues and the U.S. industrial base. The Army MS&T Strategic Plan definitizes projected requirements, objectives and technical approaches. This program industrial practices. The technologies selected have the potential for high payoff across the spectrum of Army weapons systems as well as significant impact on national program include: development of advanced manufacturing processes, equipment and systems, enhanced quality and reduced cost of Army materiel, and transfer of this restructured to focus resources on a smaller number of technology thrust areas and leverage Army resources with private and other government efforts. The technology areas supported by the program include electronics manufacturing, metals fabrication and processing, composites processing, manufacturing systems, and advanced production investments where much manufacturing technology was accomplished within individual production programs. Beginning in FY 90, the program was technological feasibility assessment, weapon systems in development or production, and modifications/upgrades to or sustainment of fielded systems.

systems. The MS&T program uses a variety of acquisition strategies including firm fixed price contracts, Cooperative Research and Development Agreements, cost sharing Acquisition Strategy: The Army MS&T program funds a variety of individual tasks, each of which solves a pervasive manufacturing issue associated with weapon arrangements, and utilization of DoD Manufacturing Centers of Excellence to complete tasks.

FY 1995 Accomplishments: Funded in PE 0603771A, project DE20.

FY 1996 Planned Program:

- electronics applications; finalize demonstration of circuit card assembly module using the CALCE software suite of physics of failure models; initiate development of automated production methods for Objective Individual Combat Weapon System (OICWS) fuze assembly; and continue educational Electronics Manufacturing - Develop a heat dissipation technique, and design and model a test chuck for thermal stress screening/testing of high sower electronic wafers; develop evaluation plan and conduct materials and process evaluations for qualification of conductive adhesives for partnerships to advance small business and minority electronics manufacturing technology.
 - Advanced Non-Metallic Rechargeable Batteries Complete contractual efforts to adapt high volume production techniques to utilize lithium-ion and other battery technologies in military-unique form/fit applications. 1946

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Project DE25

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BUDGET ACTIVITY 7 - Operational	וספבד אכדועודץ - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	PROJECT PROJECT DE25
FY 1996 Planned P	1996 Planned Program: (continued)		
7041	final reports for Staring Class FPA (Missile Seeker) and conduct final industry demonstration for technology transfer; continue development of manufacturing processes for commonants of High and Mid to High FDA Cooler begin implementation and unlidesing and some the manufacturing processes for commonants of High and Mid to High EDA Cooler begin implementation and unlidesing and some the manufacturing processes for commonants of High and Mid to High EDA Cooler begin implementation and unlidesing and some the manufacturing processes for commonants of High and Mid to High EDA Cooler begin implementation and some the manufacturing processes for commonants of High and Mid to High EDA Cooler begin implementation and an arrangement of the High EDA Cooler begin implementation and an arrangement of the High EDA Cooler begin implementation and arrangement of the High EDA Cooler begin implementation and the High EDA Cooler begin implementation and the High EDA Cooler begin implementation and the High EDA Cooler begin in the High EDA Cooler begin implementation and the High EDA Cooler begin implem	nduct final industry demonstration for technology to High EDA Coolar begin implementation and use	, and conduct industry review; prepare transfer; continue development of
1	line; and begin investigation of Manufacturing Properties of Advanced Electro-Optics Materials.	angir and wild to right for a Cooler, begin implementation and valuation processes on the manufacturing properties of Advanced Electro-Optics Materials.	mation processes on the manufacturing
• 1337	Optics - Modify and improve Opticam magnetorheological finishing (MRF) machine prototype based on process studies and pilot production runs; perform validation pilot production runs on modified Opticam MRF; expand MRF process data base to high hardness and electro-optic materials; assemble and test subassemblies for Opticam AM prototype machine; assemble and accentance test Opticam AM prototype for Suppositor of surbasic	Ifinishing (MRF) machine prototype based on procam MRF; expand MRF process data base to high I amachine; assemble and accentance test Onticam.	sess studies and pilot production runs; nardness and electro-optic materials;
	lenses in optical glass; incorporate non-contact metrology; transition Opticam micro SX machine to industry; develop advanced tooling concepts to	into deterministic microgrinding process on Optica /; transition Opticam micro SX machine to industry	m SX or Opticam PM machines;
	support fabrication of aspheric and non-axisymmetric surfaces; adapt software to support all CNC machinery development and changes; conduct industrial demos to promote and transition Opticam technology to US optics industry.	ices; adapt software to support all CNC machinery logy to US optics industry.	development and changes; conduct
3331	Missile Seekers - Develop manufacturing processes for a 2-3 layer optically integrated image processor and a 64 x 64 UV/IR stacked array; develop IPPD manufacturing methodology for millimeter wave transceivers; evaluate impact of crossovers for various fiber optic winding configurations and	-3 layer optically integrated image processor and a isceivers; evaluate impact of crossovers for various	64 x 64 UV/IR stacked array; develop fiber optic winding configurations and
920	develop techniques for detection of crossover patterns. Composites Fabrication - Complete Comanche baseline spar redesign for fiber-placed rotor blades: select test variables and initiate test procedures on	ar redesign for fiber-placed rotor blades; select test	variables and initiate test procedures on
3807	metallic substrates for adhesive-bonded structures; continue maximum variable flexibility determination for thermoplastic composites.	e maximum variable flexibility determination for the	hermoplastic composites.
324	Composite Armored Vehicle (CAV) - Evaluate application of composite design tools to Land Combat Vehicles, including large/thick composite	of composite design tools to Land Combat Vehicle	inget requirements for PAIN fibers. es, including large/thick composite
1083	structures. Metals and Processing - Develon smuttering process specification for deposition of refractory metals: initiate and complete demonstration of	ication for denosition of refractory metals: initiate	and complete demonstration of
	modeling and simulation for beryllium-aluminum casting process; and initiate investigation of process for high deposition welding of low cost	process; and initiate investigation of process for hig	h deposition welding of low cost
• 5000	Instrumented Factory for Gears - Continue process optimization and carburization studies; continue development of improved heat treatment	ation and carburization studies; continue developm	nent of improved heat treatment
	processing; continue development of improved grinding, automated deburring and netshape forming of gears; initiate validation of computer model to predict and control heat treatment distortion; and fabricate prototype system to automate gear deburring.	utomated deburring and netshape forming of gears prototype system to automate gear deburring.	; initiate validation of computer model to
• 713	Manufacturing Test Technology - Complete prototype automated test station for uncooled Staring FPA's; complete sensor suite and pattern matching algorithms for Non-Intrusive, In-Field Diesel Engine Diagnostic System; install blade inspection system for Non-Contact Measurement of Propulsion	omated test station for uncooled Staring FPA's; conostic System: install blade inspection system for N	mplete sensor suite and pattern matching lon-Contact Measurement of Promulsion
e	System Components and conduct demonstration test; complete testing and debugging of prototype sorption and permeation test apparatus. Chemical/Biological Defense - Complete one anti-pathogen antibody process, specifications and demonstration; and complete scale-up of	plete testing and debugging of prototype sorption n antibody process, specifications and demonstration	and permeation test apparatus.
	thermostable urease process to 150-liter capacity, specifications and demonstration.	tions and demonstration.	
		\$ \$ \$	
Project DE25	$ ho_d$	Page 2 of 5 Pages	Exhibit R-2 (PE 0708045A)





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вирбет АстіvітУ 7 - Operational	вирбет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	PROJECT dness DE25
FY 1996 Planned I • 1733	 FY 1996 Planned Program: (continued) 1733 Propellants and Explosives - Initiate live demo of continuous processing system; complete HAN process technology demo; initiate triethanolammonium nitrate (TEAN) process optimization; develop and test alternative methods of computer simulation analysis procedures for 	us processing system; complete HAN process technodevelop and test alternative methods of computer si	logy demo; initiate nulation analysis procedures for
• 1065	munitions Load Assemble Pack (LAP) process to enhance productivity. Advanced Integrated Manufacturing Systems - Conduct field tests of parts produced in laser forming titanium structures without molds; simulate injection molding of composite components for Composite Armored Vehicle, demonstrate virtual environment, and deploy Smartweave sensors to observe resin flow, develop preliminary enterprise information architecture that enables concurrent operation of multiple functional systems: develop	productivity. Id tests of parts produced in laser forming titanium s Armored Vehicle, demonstrate virtual environment, tion architecture that enables concurrent operation o	ructures without molds; simulate and deploy Smartweave sensors to multiple functional systems; develop
• 556	missile/munitions IPPD database tools. Remanufacturing and Reclamation - Optimize the remanufacturing process for servovalve assemblies and conduct Tri-Service application studies; complete prove-out of the supercritical CO2 cleaning process and specifications for optical parts/subassemblies; develop alternative to chromium	acturing process for servovalve assemblies and cond	ict Tri-Service application studies; develop alternative to chromium
- 987	plating process using High Velocity Oxygen Fuel (HVOF) techniques. Sensors in Manufacturing - Conduct process optimization trials for Smartweave In-Situ Sensors; develop hardware, software and prototype to inspect additional flaw classes for Nondestructive Visualization Using 3D/X-ray Laminography; conduct validation testing of prototype nondestructive detector array tester; and develop and evaluate alternate Micro-Electro-Mechanical System (MEMS) designs of a vibratory rate microgyroscope for	techniques. rials for Smartweave In-Situ Sensors; develop hardwing 3D/X-ray Laminography; conduct validation tedicro-Electro-Mechanical System (MEMS) designs of	are, software and prototype to inspect ting of prototype nondestructive a vibratory rate microgyroscope for
279	low cost solutions to position sensing problems. Soldier Systems - Develop technology and processes required for troop equipment including next generation of body armor and parachutes and economic production of advanced combat rations. Integrated Composites Manufacturing - Continue demonstration of business practices and improved process technologies through fabrication of	red for troop equipment including next generation of ation of business practices and improved process tec	body armor and parachutes and nnologies through fabrication of
• 625	selected components. Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. Revised Economic Assumption not available for execution	accordance with the Small Business Innovation Rese	arch Program Reauthorization Act of
Total 27927			
FY 1997 Planned Program: • 1425 Electro Adhesi acceler	Fogram: Electronics Manufacturing - Catalog existing commercial materials and analyze suitability for military applications for Advanced Conductive Adhesives; develop prototype high power test chuck and evaluate heat dissipation techniques using missile seeker electronics hardware; conduct accelerated life testing to validate CALCE model for physics of failure of electronic equipment; conduct in-process testing and apply process control	naterials and analyze suitability for military applicativaluate heat dissipation techniques using missile seeles of failure of electronic equipment; conduct in-properties of the conduct in-p	ons for Advanced Conductive er electronics hardware; conduct ess testing and apply process control
1800	methods to produce high yield, high quanty that fuze assemblies for Colecure manytudal Collidat weapon system, and continue educational partnerships to advance small business and minority manufacturing technology. Electro-Optics - Build and test High and Mid to High FPA Coolers for demonstration and validation of developed processes; formulate and test material composition and structure models for manufacturing properties of electro-optical materials.	induces for Colective individual Collidat weapon systeming technology. Coolers for demonstration and validation of developing properties of electro-optical materials.	ed processes; formulate and test
Project DE25	Pa	Page 3 of 5 Pages	Exhibit R-2 (PE 0708045A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) DATE March 1996	
BUDGET ACTIVITY 7 - Operational	PENUMBER AND TITLE 7 - Operational System Development Naminacturing Technology	ECT 25
		William Committee
** 1997 Planned F	FY 1997 Planned Program: (continued) • 1500 Optics - Adapt MRF or other suitable process for deterministic finishing of aspheric and non-axisymmetric optical components; determine requirements for a CNC machine capable of finishing aspheric components; perform process studies and pilot production runs of aspheric lenses of all	ofall
	types on the Opticam AM machine; develop design modifications to Opticam AM machine based on pilot runs; incorporate in-process metrology into	y into
	Opticam machines; adapt software to support all CNC machinery development and changes; conduct industrial demos to promote and transition Opticam technology to US optics industry.	TO ANGELOW TO THE MEMORY
3600	Missile Seekers - Demonstrate manufacturing techniques for a 3-5 layer image processor in TACAWS Auto Target Recognition System and a 128 x 128 IIV/IR stacked array for notential use in Stingar Block. II: and continue to develor IDDD manufacturing mathods for millimater ways transcripture.	28 x
	by integrating and implementing newly developed or improved manufacturing processes and techniques into new or existing work cells to form a pilot production line.	a pilot
800	Composites Fabrication - Complete Comanche fiber-placed rotor blade spar mandrel design, and fabrication of mandrel and spar; continue testing on	no gu
	metallic substrates and initiate test procedures on composite matrix materials; continue maximum variability flexibility determination for composites and begin qualification testing of microfactory facility.	sites
• 200	Composite Armored Vehicle - Develop fabrication and assembly process models to detail sequence of activities in manufacturing composite	ЖОМИРСИ М
• 350	numannor components. Metals and Processing - Develop and demonstrate process for using beryllium aluminum recycled material in production of precision casting.	All a common and a
	complete government/industry briefing, and complete final technical report.	
• 1000	Instrumented Factory for Gears (INFAC) - Complete validation of computer model; demonstrate automated deburring process; and continue develonment of improved grinding and net shape forming	riord (Single-Seek) are
• 450	?	velop
400	standardized shens with known restdual stress tovers for Automated Nestdual Stress Analyzing Machine (ANSAM). Chemical/Biological Defense - Initiate development of production processes for decontamination enzymes.	a ye i a Makib
• 2000	Propellants and Explosives - Complete live demo of continuous processing system; complete TEAN process optimization; initiate DNT/TNT process	rocess
	demonstration; complete modeling and issue final report detailing productivity improvements of Computer Simulation Analysis for Munitions LAP Process.	ΆΡ,
096	Advanced Integrated Manufacturing Systems - Complete enterprise information architecture that enables concurrent operation of multiple functional	ional
	systems for integration and management of manufacturing information; demonstrate process for more sophisticated shapes and structures for laser forming of titanium structures without molds, and transition to industry suppliers; develop missile/munitions virtual factories; and develop rapid	ser
(design protocol in design tools for resin transfer molding of thick composite structures.	
009	Kemanutacturing and Keclamation - Optimize process and conduct final prove-out of High Velocity Oxygen Fuel Thermal Spray System.	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	-2 Exhibit)	DATE March 1996
вирбет АстіVITY 7 - Operational	вирдет астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Arm) Manufacturing	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	PROJECT ess DE25
FY 1997 Planned P 950 107	 FY 1997 Planned Program: (continued) Sensors in Manufacturing - Complete testing of embedded Smartweave grid, conduct ballistic impact damage testing/validation, and develop expert system; develop inspection algorithms and flaw recognition expert system for Nondestructive Visualization Using 3D/X-ray Laminography; continue development of prototype nondestructive detector array tester; use experimental techniques to optimize design parameters for vibratory rate microgyroscope. Soldier Systems - Fabricate and conduct operational testing on a portable fabric sorption tester for chemical protective fabrics. Integrated Composites Manufacturing - Complete demonstration in pilot production environment; define benefits based on established metrics; develop implementation for transition of demonstrated changes; conduct government/industry end of project briefings; initiate and complete final technical report. 	Smartweave grid, con expert system for Noter; use experimenta gon a portable fabric etration in pilot produnges; conduct govern	ting of embedded Smartweave grid, conduct ballistic impact damage testing/validation, and develop expend flaw recognition expert system for Nondestructive Visualization Using 3D/X-ray Laminography; contingues to a steector array tester; use experimental techniques to optimize design parameters for vibratory rate operational testing on a portable fabric sorption tester for chemical protective fabrics. Complete demonstration in pilot production environment; define benefits based on established metrics; demonstrated changes; conduct government/industry end of project briefings; initiate and complete final	g/validation, and develop expert ID/X-ray Laminography; continue meters for vibratory rate ive fabrics. sased on established metrics; lighting and complete final
Total 16842	•			
B. Project Change Summary Previous President's Budget Requ Appropriated Amount (FY 1995)	B. Project Change Summary Previous President's Budget Request (FY 1996) Appropriated Amount (FY 1995) A directments to FY 1995	FY 1996 0	<u>FY 1997</u> 17284	
Appropriated Amount (FY 1996) Adjustments to FY 1996	nt (FY 1996) 7 1996	28273		
Adjustments to Budg	Adjustments to Budget (FY 1997) Year Since FY 1996		-442	
President's Budget Current Budget Estin	Fresident's Budget Current Budget Estimate Submit for FY 1997	27927	16842	
Change Summary Explanation: Funding: :FY 95: Prog FY 96: Cong	Summary Explanation: Funding: :FY 95: Program funded in PE 0603771A. FY 96: Congressional direction to restructure program to PE 0708045A.	0708045A.		
C. Other Program	C. Other Program Funding Summary: None.			
D. Schedule Profile	D. Schedule Profile: Each MS&T task has its own schedule.			
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APPENDIX A

RDT&E CONGRESSIONAL DESCRIPTIVE SUMMARIES MAILING LIST

PRINT

ADDRESS

2 DOD Compt, MS, DMI, Pentagon, Room 1B728, Washington, DC 20310-1100 OSD, ATTN: DOT&E, Pentagon, Room 3E318, Washington, DC 20310 ASD(RA), Pentagon, Room 3E325, Washington, DC 20310 ASD(C31), Pentagon, Room 3E209, Washington, DC 20310 ASD(C31), Pentagon, Room 3E209, Washington, DC 20310 ASD(CA), Pentagon, Room 3E321, Washington, DC 20310 ASD(P&R), 4000 Defense Pentagon, Room 3C980, Washington, DC 20310 ASD(PA&E), Pentagon, Room 2E321, Washington, DC 20310 ASD(PA&E), Pentagon, Room 2E331, Washington, DC 20310 ASD(PA&E), Pentagon, Room 2E600, Washington, DC 20310 HQDA, (SAUS-OR), Pentagon, Room 2E600, Washington, DC 20310 HQDA (SAIL&E), Pentagon, Room 2E614, Washington, DC 20310 HQDA (SARD-DEP), Pentagon, Room 2E614, Washington, DC 20310 HQDA (SAFM-CAZ-A), 5611 Columbia Pike, Falls Church, VA 22041-5050 HQDA (BAS-APD), Pentagon, Room 1C460, Washington, DC 20310 HQDA (BAS-APD), Pentagon, Room 1C460, Washington, DC 20310 HQDA (DACS-DPA), Pentagon, Room 3C773, Washington, DC 20310 HQDA (DACS-DPA), Pentagon, Room 3C747, Washington, DC 20310 HQDA (DACS-DPA), Pentagon, Room 3D631, Washington, DC 20310 HQDA (DACS-DPA), Pentagon, Room 3D631, Washington, DC 20310 HQDA (DACS-DRA), Pentagon, Room 3D631, Washington, DC 20310 HQDA (DAMI-ZRM)(Mr. Bromwell), Pentagon, Room 2B683, Washington, DC 20310 HQDA (DAMI-ZRM)(Mr. Bromwell), Pentagon, Room 2D477, Washington, DC 20310 HQDA (DAMI-ZRM)(Mr. Bromwell), Pentagon, Room 2D6777, Washington, DC 20310	=	USD (Policy), DUSD(R&P), Pentagon, Room 1C469, Washington, DC 20301-2100
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		ASD(RA), Pentagon, Room 3E325, Washington, DC 20310
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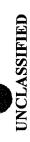
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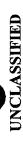
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